

REPORT NUMBER: 201-MGA-2003-001

**SAFETY COMPLIANCE TESTING FOR FMVSS 201
RIGID POLE SIDE IMPACT TEST**

Honda of America Manufacturing, Inc.
2003 Honda Accord 4 door
NHTSA NUMBER: C35301

**PREPARED BY:
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March 24, 2003

FINAL REPORT

**PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
OFFICE OF VEHICLE SAFETY COMPLIANCE
400 SEVENTH STREET, SW, ROOM 6111 (NVS-220)
WASHINGTON, D.C. 20590**

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16. Abstract A rigid pole side impact test was conducted on a 2003 Honda Accord 4 door in accordance with FMVSS 201, "Occupant Protection in Interior Impact", S6.1(b)(3) and the Office of Vehicle Safety Compliance Test Procedure No. TP-201P-02 "Rigid Pole Side Impact Test". The test was conducted at MGA Research Corporation in Burlington, Wisconsin on March 24, 2003. The impact velocity of the vehicle was 28.6 kph, and the ambient temperature at the struck side (driver's) of the target vehicle at the time of impact was 21°C. The post-test maximum crush was 435 mm at level 3. The test vehicle's occupant performance is as follows: <table border="0"> <tr> <td>HIC</td> <td><u>REQUIREMENTS</u> ≤ 1000</td> <td><u>DRIVER</u> 443</td> </tr> </table> The doors on the struck side of the vehicle did not separate from the body at the hinges or latches and the opposite doors did not open during the side impact event.				HIC	<u>REQUIREMENTS</u> ≤ 1000	<u>DRIVER</u> 443
HIC	<u>REQUIREMENTS</u> ≤ 1000	<u>DRIVER</u> 443				
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SECTION 1

PURPOSE AND TEST PROCEDURE

1.1 PURPOSE

This rigid pole side impact test is conducted as part of the FY' 2003 test program sponsored by the National Highway Traffic Safety Administration (NHTSA), under contract No. DTNH22-01-D-01033. The purpose of this test was to evaluate occupant protection in interior impact in a 2003 Honda Accord 4 door manufactured by Honda of America Manufacturing, Inc.

1.2 TEST PROCEDURE

The rigid pole side impact test was conducted in accordance with the current National Highway Traffic Safety Administration (NHTSA), Office of Vehicle Safety Compliance (OVSC), laboratory test procedure TP-201P-02, dated October 21, 2001 and the corresponding MGA Research Corporation Test Procedure MGA-NHTSA8. The procedures for receiving, inspection, testing, and reporting of test results are described in the test procedures and are not repeated in this report.

MGA does not endorse or certify products. The manufacturer's name appears solely for identification purposes.

SECTION 2

SUMMARY OF RIGID POLE SIDE IMPACT TEST

2.1 SUMMARY OF RIGID POLE SIDE IMPACT TEST

A rigid pole side impact test was performed on a 2003 Honda Accord 4 door. The subject vehicle was towed into a rigid pole at a velocity of 28.6 km/h. The specified impact velocity range is from 27.2 to 28.8 km/h. The test vehicle was positioned 90° to the line of forward motion. The weight of the vehicle as tested was 1656.5 kg. The test was conducted at MGA Research Corporation in Burlington, Wisconsin, on March 24, 2003.

One (1) real-time motion picture camera and twelve (12) high-speed motion picture cameras were used to document the impact event. Camera locations and pertinent camera information are documented in the data sheets. Pre- and post-test photographs of the vehicle and SID/HIII can be found in Appendix A. One SID/HIII was placed in the left front outboard designated seating position according to instructions specified in the TP-201P-02 dated October 21, 2001. The SID/HIII was instrumented in the following locations:

- Head Center of Gravity (CG) tri-axial accelerometers (X, Y, and Z axis)
- Upper Neck 6 channel load cell (X, Y, Z force and moment)
- Left Upper Rib (LUR) uni-axial accelerometer (Y-axis primary and redundant)
- Left Lower Rib (LLR) uni-axial accelerometer (Y-axis primary and redundant)
- Lower Thoracic Spine (T12) uni-axial accelerometer (Y-axis primary and redundant)
- Pelvic (PEV) section uni-axial accelerometer (Y-axis primary and redundant)

The test vehicle was instrumented with twenty (20) structural accelerometers. All data channels were recorded with a fully self contained on-board EME Data Acquisition System. The data was digitally sampled at 10,000 samples per second and processed per Section 12.2 of the Test Procedure.

2.2 GENERAL COMMENTS

The test vehicle sustained a maximum static crush of 435 mm at level 3, at the vertical impact line. The driver SID/HIII, Serial No. 36, was calibrated just prior to this test. The SID/HIII's injury criteria are summarized as follows:

Measurements	Units	Driver
HIC		443
TTI*	G's	53
Pelvis*	G's	51
Neck Force X*	N	-248
Neck Force Y*	N	-540
Neck Force Z*	N	910
Neck Moment X*	Nm	-38.5
Neck Moment Y*	Nm	18.1
Neck Moment Z*	Nm	34.8

* Information Purposes Only

Test summaries and post-test observations are presented in Section 3. The vehicle, camera, and occupant measurements are presented in Section 4. Appendix A contains the still photograph prints. Appendix B contains the SID/HIII and vehicle data traces. Appendix C contains the SID/HIII's configuration and performance verification data. Appendix D contains the test equipment information.

TEST NOTES

The following accelerometers were not used for this test:

A Pillar Upper

B Pillar Upper

Left Roof

Right Roof

SECTION 3
SIDE IMPACT DUMMY (SID/HIII) AND VEHICLE TEST DATA

Test Vehicle: 2003 Honda Accord 4 door
 Test Program: FMVSS 201P

NHTSA No. C35301
 Test Date: March 24, 2003

CONVERSION FACTORS USED IN THIS REPORT*

Quantity	Typical Application	English Units	Metric Unit	Multiply By
Mass	Vehicle Weight	lb	kg	0.4536
Linear Velocity	Impact Velocity	mile/h	km/h	1.609
Length or Distance	Measurements	in	mm	25.4
Volume	Fuel Systems	gal	liter	3.785
Volume	Small Fluids	oz	mL	29.573
Pressure	Tire Pressure	lbf/in ²	kPa	7.0
Volume	Liquid	gal	liter	3.785
Temperature	General Use	°F	°C	$=(\text{tf} - 32)/1.8$
Force	Dynamic Forces	lbf	N	4.448
Moment	Torque	lbf/ft	Nm	1.355

*Based on the Recommended Practice in SAE J916, May 85

DATA SHEET NO. 1
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2003 Honda Accord 4 door
 Test Program: FMVSS 201P

NHTSA No. C35301
 Test Date: March 24, 2003

TEST VEHICLE INFORMATION

Make	Honda
Model	Accord
Body Style	4 door
NHTSA No.	C35301
VIN	1HGCM66523A007359
Color	Desert Mist
Delivery Date	1/9/03
Odometer Reading (mile)	487
Dealer	Jeffrey Honda
Transmission	Automatic
Final Drive	Front
Number of Cylinders	6
Engine Displacement (L)	3.0
Engine Placement	Lateral

TEST VEHICLE OPTIONS

Front Airbag	Yes
Side Airbags	Seat and Curtain
Power Windows	Yes
Power Steering	Yes
Power Door Locks	Yes
Tilt Wheel	Yes
Air Conditioning	Yes
Power Brakes	Yes
Disc Brakes, Front	Yes
Disc Brakes, Rear	Yes
Anti-lock Brakes	Yes
AM/FM/CD	Yes
Anti-theft System	Yes
Cruise Control	Yes

DATA FROM CERTIFICATION LABEL

Manufactured By	Honda of America Manufacturing, Inc.	GVWR (kg)	1950
Date of Manufacture	9/02	GAWR Front (kg)	1070
		GAWR Rear (kg)	909

DATA FROM TIRE PLACARD

Measured Parameter	Front	Rear
Maximum Tire Pressure (kPa)	300	300
Cold Pressure (kPa)	220	210
Recommended Tire Size	P205/60R16 91V	P205/60R16 91V
Tire Size on Vehicle	P205/60R16 91V	P205/60R16 91V
Tire Manufacturer	Michelin	Michelin

Measured Parameter	Front	Rear	Third	Total
Type of Seats	Bucket	Contour		
Number Of Occupants	2	3		5
Capacity Wt. (VCW) (kg)				385
Cargo Wt. (RCLW) (kg)				45.4

DATA SHEET NO. 1... (continued)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2003 Honda Accord 4 door

NHTSA No. C35301

Test Program: FMVSS 201P

Test Date: March 24, 2003

TEST VEHICLE WEIGHTS

	Units	As Delivered (UVW) (Axle)			As Tested (ATW) (Axle)		
		Front	Rear	Total	Front	Rear	Total
Left	kg	476.3	299.8		489.4	347.9	
Right	kg	478.1	282.6		523.5	295.7	
Ratio	%	62.1	37.9		61.1	38.9	
Totals	kg	954.4	582.4	1536.8	1012.9	643.6	1656.5

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value
Total Delivered Weight (UVW)	kg	1536.8
Weight of SID/HII Side Impact Dummy	kg	80.7
Rated Cargo/Luggage Weight (RCLW)	kg	45.4
Calculated Vehicle Target Weight (TVTW)	kg	1662.9

TEST VEHICLE ATTITUDES AND CG

	Units	As Delivered	Fully Loaded	Ready For Test
Right Front	mm	708	704	772*
Left Front	mm	708	699	770*
Right Rear	mm	700	690	763*
Left Rear	mm	698	683	763*
Right Door Sill Angle	deg	0.2 ND	0.1 BD	0.0
Left Door Sill Angle	deg	0.2 ND	0.1 ND	0.1 ND
Front Bumper Angle	deg	0.0	0.3 LD	0.0
Rear Bumper Angle	deg	0.1 LD	0.3 LD	0.1 LD

ND = NOSE DOWN, BD = BACK DOWN, LD = LEFT DOWN, RD = RIGHT DOWN

*on wheel dollies

GENERAL TEST VEHICLE DATA

Measurement Description	Units	Value
Test Vehicle Wheel Base	mm	2743
Total Vehicle Length at Left Side	mm	3896
Total Vehicle Length at Centerline	mm	4800
Total Vehicle Length at Right Side	mm	3896
Total Vehicle Width at B-Post	mm	1820
Weight of Ballast in Cargo Area	kg	0
Amount of Stoddard Solvent in Fuel Tank	liters	60.1

DATA SHEET NO. 1... (continued)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2003 Honda Accord 4 door
Test Program: FMVSS 201P

NHTSA No. C35301
Test Date: March 24, 2003

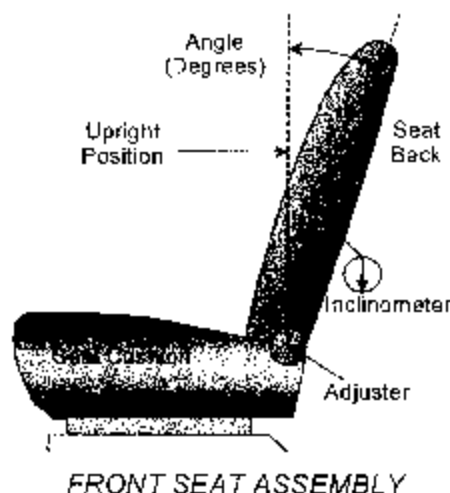
TEST VEHICLE VERTICAL IMPACT LINE DATA

Measurement Description	Units	Value
Target Impact Point Aft of Front Axle	mm	1449
Actual Impact Point Aft of Front Axle	mm	1456

NORMAL DESIGN RIDING POSITION

The driver's seat back is positioned to the manufacturer's designated angle. The procedure for the seat is as follows: place the seat 8 degrees rearward from the forward position.

Driver seat back angle: Initial - 9.5 deg. on headrest post
Final - 6.1 deg. on headrest post



SEAT FORE/AFT POSITIONS

The fore/aft is initially set to the middle position for the driver's seat.

Driver seat fore/aft total travel: 240 mm

Driver seat fore/aft position: 120 mm

SEAT BELT UPPER ANCHORAGE

The test vehicle is equipped with adjustable "D" ring anchorage for the driver's seat position. The driver's "D" ring anchorage was placed in the second position of four with the top position as 1.

DATA SHEET NO. 1... (continued)
TEST VEHICLE INFORMATION

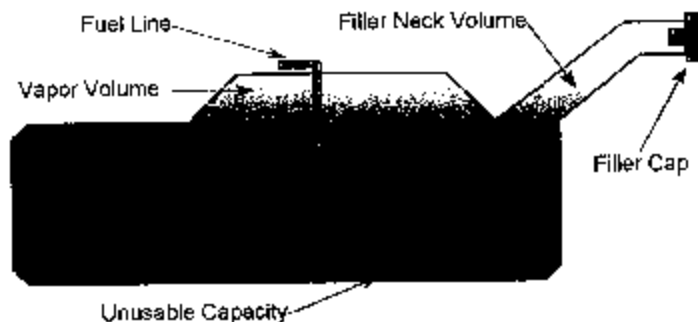
Test Vehicle: 2003 Honda Accord 4 door
Test Program: FMVSS 201P

NHTSA No. C35301
Test Date: March 24, 2003

FUEL TANK CAPACITY DATA

The "Usable Capacity" of the standard equipment fuel tank is: 65.1 liters
The "Usable Capacity" of any optional equipment fuel tank is: n/a liters
92-94% of "Usable Capacity" for certification to FMVSS 301 requirements: 59.9 - 61.2 liters
Actual amount of Stoddard solvent added to vehicle for certification test 60.1 liters

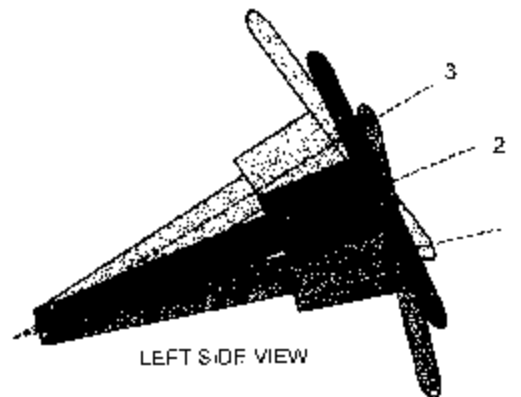
The test vehicle is equipped with an electric fuel pump. The fuel filler door is located on the left rear fender.



VEHICLE FUEL TANK ASSEMBLY

STEERING COLUMN ADJUSTMENT

Steering wheel and column adjustments are made so that the steering wheel hub is at the geometric center of the locus it describes, when it is moved through its full range of motion. An aluminum plate is placed across the rim of the steering wheel, and inclinometer is placed onto the plate and the angle is measured.



STEERING COLUMN ASSEMBLY

Lowermost, position 1: 20.0
Geometric center, position 2: 22.9
Uppermost, position 3: 25.8

The steering column has 45 mm of fore/aft adjustment. It was set back 22 mm (at the midpoint of its range) for the test.

DATA SHEET NO. 2
TEST VEHICLE SUMMARY OF RESULTS

Test Vehicle: 2003 Honda Accord 4 door
 Test Program: FMVSS 201P

NHTSA No. C35301
 Test Date: March 24, 2003

TEST VEHICLE WEIGHTS

	Units	As Delivered (UVW)			As Tested (ATW)		
		Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total
Left	kg	476.3	299.8		489.4	347.9	
Right	kg	478.1	282.6		523.5	295.7	
Weight Ratio	%	62.1	37.9		61.1	38.9	
Totals	kg	954.4	582.4	1536.8	1012.9	643.6	1656.5

MAXIMUM EXTERIOR STATIC CRUSH

Level	Measured Parameter	Units	Maximum Crush	Above Ground
Level 1	Sill Top Height	mm	362	372
Level 2	Occupant H-Point	mm	433	584
Level 3	Mid Door	mm	435	685
Level 4	Window Sill	mm	393	990
Level 5	Window Top	mm	205	1448
N/A	Maximum Penetration	mm	435	685

INSTRUMENTATION

SID/HII Instrumentation	17
Vehicle Structure Accelerometers	20
Total	37

CAMERAS

Onboard Vehicle	3
Offboard Vehicle	9
Total	12

IMPACT POINT DATA

Measured Parameter	Units	Requirement	Value
Horizontal Offset	mm	+/- 50	7 rear

DATA SHEET NO. 3
POST TEST OBSERVATIONS

Test Vehicle: 2003 Honda Accord 4 door
 Test Program: FMVSS 201P

NHTSA No. C35301
 Test Date: March 24, 2003

TEST DUMMY INFORMATION AND CONTACT POINTS

Description	Left Front Seating Position
Dummy Type / Serial No.	SID/HIII / 036
Head Contact	Airbag curtain
Upper Torso Contact	Side airbag
Lower Torso Contact	Side airbag, armrest
Left Knee Contact	Door trim panel
Right Knee Contact	Left knee

POST TEST DOOR OPENING AND SEAT TRACK INFORMATION

Description	Front	Rear
Left Side Door Opening	Door remained closed and latched	Door remained closed and latched
Right Side Door Opening	Door remained closed and latched	Door remained closed and latched
Seat Movement	0	0
Seat Back Failure	None	None

POST TEST STRUCTURAL OBSERVATIONS

Critical Areas of Performance	Observations and Conclusions
Pillar Performance	No failures
Sill Separation	None
Windshield Damage	Cracked
Window Damage	Left side windows down for test
Other Notable Effects	None

AIRBAG DEPLOYMENT

	Driver
Front	no
Side	yes
Curtain	yes

ARMREST LOCATION AND SEAT CRUSH

	Driver
Front Armrest (from bottom of window)	280
Front Seat Back Crush	160
Front Seat Cushion Crush	72

SECTION 4
OCCUPANT AND VEHICLE INFORMATION

DATA SHEET NO. 4
SID/HIII INJURY CRITERIA AND SENSOR DATA

Test Vehicle: 2003 Honda Accord 4 door
 Test Program: FMVSS 201P

NHTSA No. C35301
 Test Date: March 24, 2003

THORAX AND PELVIS PEAK ACCELERATIONS (FIR 100 Filtered)

Location	Axis	Units	Driver			
			Max	Time	Min	Time
Upper Rib (LUR)	Y	G's	56.1	29	-11.1	122
Upper Rib (LUR) (R)	Y	G's	57.6	29	-11.7	122
Lower Rib (LLR)	Y	G's	34.8	32	-8.3	122
Lower Rib (LLR) (R)	Y	G's	36.9	27	-9.1	122
Lower Spine (T ₁₂)	Y	G's	49.8	48	-8.7	85
Lower Spine (T ₁₂) (R)	Y	G's	50.1	48	-8.7	85
Pelvis (PEV)	Y	G's	51.1	44	-12.0	74
Pelvis (PEV) (R)	Y	G's	51.4	44	-11.9	74

THORACIC TRAUMA INDEX (TTI) AND PELVIC ACCELERATION (FIR 100 Filtered)

Location	Driver			
	LUR	T ₁₂	TTI(g)	PEV(g)
Rib, Spine, and Pelvis	56.1	49.8	53	51.1
Rib, Spine, and Pelvis (R)	57.6	50.1	54	51.4

UPPER NECK FORCES AND MOMENTS (SAE CLASS 1000/600 Filtered)

Location	Axis	Units	Driver			
			Max	Time	Min	Time
Neck Force	X	N	166	171	-248	86
Neck Force	Y	N	68	40	-540	65
Neck Force	Z	N	910	49	-86	33
Neck Moment	X	Nm	18.2	67	-38.5	52
Neck Moment	Y	Nm	18.1	68	-14.6	184
Neck Moment	Z	Nm	34.8	63	-13.0	106

HEAD CG PEAK ACCELERATIONS (SAE CLASS 1000 Filtered)

Location	Axis	Units	Driver			
			Max	Time	Min	Time
Head CG	X	G's	4.2	170	-15.3	65
Head CG	Y	G's	68.2	56	-8.5	157
Head CG	Z	G's	11.1	31	-5.5	57
Head CG Resultant		G's	68.6	56		

HEAD INJURY CRITERIA (SAE CLASS 1000 Filtered)

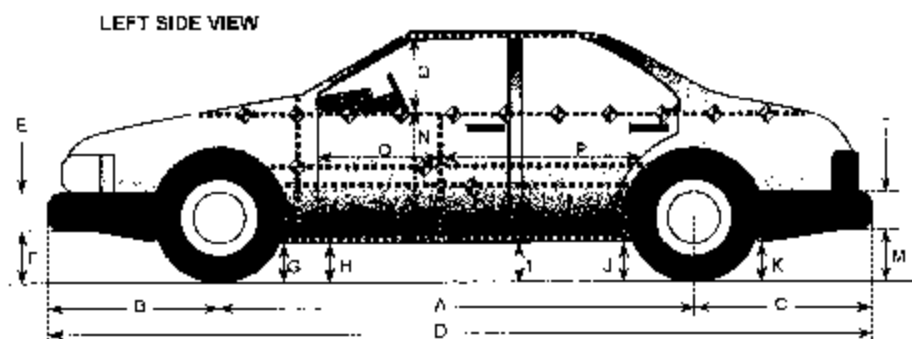
Location	Driver			
	HIC	T1	T2	Avg G's
Head CG Resultant	443	45.8	65.9	54.8

Positive Acceleration Polarities: Longitudinal (X) = + Forward
 (Conforms to SAE J211) Lateral (Y) = + Right
 Vertical (Z) = + Down

DATA SHEET NO. 5
VEHICLE PRE-TEST AND POST-TEST MEASUREMENTS

Test Vehicle: 2003 Honda Accord 4 door
 Test Program: FMVSS 201P

NHTSA No. C35301
 Test Date: March 24, 2003



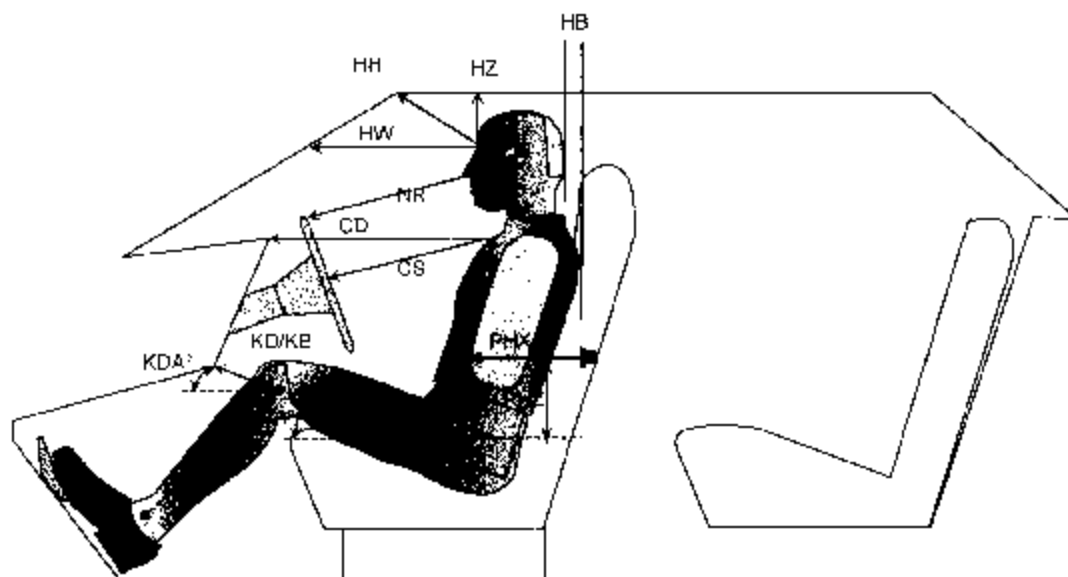
All Measurements in mm

Code	Measurement Description	Pre-Test	Post-Test	Difference
A	Wheelbase	2743	2649	94
B	Front Axle to FSOV	985	1009	-24
C	Rear Axle to RSOV	1072	1103	-31
D	Total Length at Centerline	4800	4761	39
E	Front Bumper Thickness	105	105	0
F	Front Bumper Bottom to Ground	489	515	-26
G	Sill Height at Front Wheel Well	260	242	18
H	Sill Height at Front Door Leading Edge	245	247	-2
I	Sill Height at "B" Pillar	256	218	38
J1	Sill Height at Rear Wheel Well	267	301	-34
J2	Pinch Weld Height at Rear Wheel Well	253	277	-24
K	Sill Height Aft of Rear Wheel Well	324	332	-8
L	Rear Bumper Thickness	260	260	0
M	Rear Bumper Bottom to Ground	416	407	9
N	Sill Height to Window Bottom Sill	705	667	38
O	Front Door Leading Edge to Impact CL	998	930	68
P	Rear Door Trailing Edge to Impact CL	1005	923	82
Q	Front Window Opening	360	422	-62
R	Right Side Length	3896	3890	6
S	Left Side Length	3896	3795	101
T	Vehicle Width at "B" Post	1820	1547	273

DATA SHEET NO. 6
SID/HIII LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2003 Honda Accord 4 door
 Test Program: FMVSS 201P

NHTSA No. C35301
 Test Date: March 24, 2003

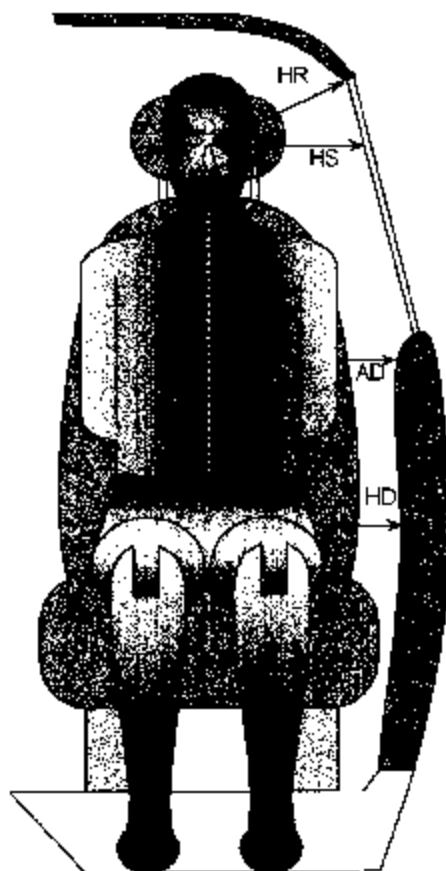


Driver Code	Measurement Description	Driver	
		Length(mm)	Angle(°)
HB	Back of Head to Back of Window @ Head CG	51	
HH	Head to Header	347	
HW	Head to Windshield	571	
HZ	Head to Roof	137	
NR	Nose to Rim	398	
CD	Chest to Dash	501	
CS	Chest to Steering Wheel	314	
KDL	Left Knee to Dash	211	0
KDR	Right Knee to Dash	172	0
PA	Pelvic Angle		23.9
PHX	H-Point to Striker (X-Axis)	220	
PHZ	H-Point to Striker (Z-Axis)	134	

DATA SHEET NO. 7
SID/HIII LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2003 Honda Accord 4 door
 Test Program: FMVSS 201P

NHTSA No. C35301
 Test Date: March 24, 2003



FRONT VIEW OF DUMMY

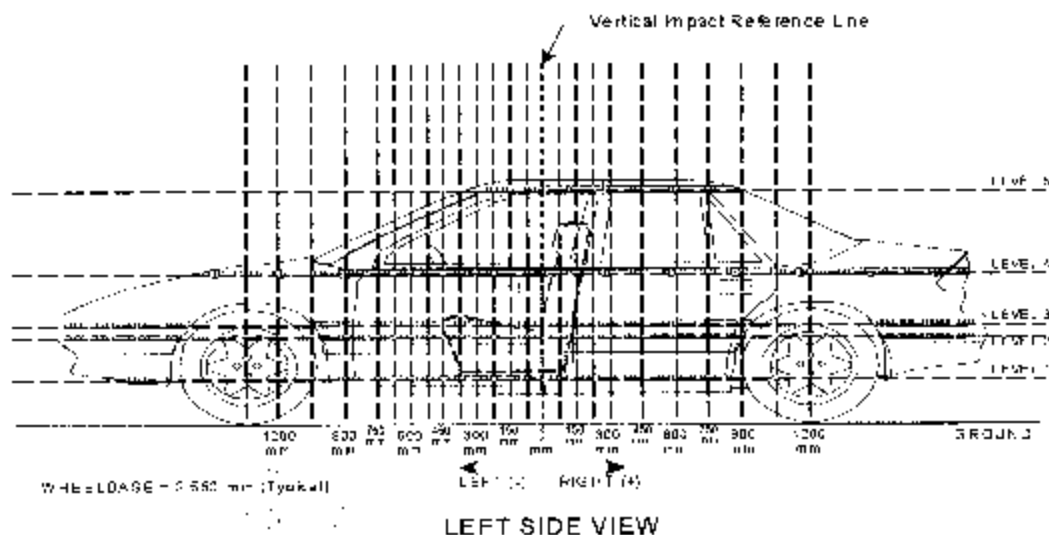
Code	Measurement Description	Units	Driver
HR	Head to Side Header	mm	191
HS	Head to Side Window	mm	304
AD	Arm to Door	mm	116
HD	H-Point to Door	mm	154

DATA SHEET NO. 8
VEHICLE SIDE MEASUREMENTS

Test Vehicle: 2003 Honda Accord 4 door
 Test Program: FMVSS 201P

NHTSA No. C35301
 Test Date: March 24, 2003

PRETEST AND POST TEST EXTERIOR PROFILE MEASUREMENTS



Measurements are taken with vehicle in the as tested condition.
 Measurements along the vertical 0 mm.

Level	Measurement Description	Units	Height Above Ground
5	Window	mm	1448
4	Window Sill	mm	990
3	Mid Door	mm	685
2	Occupant H-Point	mm	584
1	Sill Top	mm	372

DATA SHEET NO. 9
VEHICLE EXTERIOR CRUSH PROFILES

Test Vehicle: 2003 Honda Accord 4 door
Test Program: FMVSS 201P

NHTSA No. C35301
Test Date: March 24, 2003

	Pre-Test					Post-Test					Difference				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
-1800				316					354					38	
-1650				294					337					43	
-1500				279					326					47	
-1350				271					320					49	
-1200				265					320					55	
-1050		198	195	260			259	253	320			61	58	60	
-900	219	200	195	258		288	277	284	323		69	77	89	65	
-825	230	200	194	257		312	309	311	332		82	109	117	75	
-750	233	200	194	255		327	340	339	342		94	140	145	87	
-675	233	199	193	253		338	371	367	364		105	172	174	111	
-600	233	197	192	252		350	399	390	393		117	202	198	141	
-525	231	197	191	252		368	428	423	421		107	231	232	169	
-450	231	196	191	251		388	451	442	452		157	255	251	201	
-375	233	195	190	250		409	473	467	481		176	278	277	231	
-300	233	195	189	248	494	432	494	495	515	623	199	299	306	267	129
-225	235	194	188	247	490	463	514	523	547	634	228	320	335	300	144
-150	235	193	188	247	486	520	550	551	580	645	285	357	363	333	159
-75	235	193	188	247	485	574	595	593	612	667	339	402	405	365	182
0	235	194	188	247	483	597	627	623	640	688	362	433	435	393	205
75	237	194	188	247	482	580	622	612	620	675	343	428	424	373	193
150	238	194	188	246	481	536	578	562	575	670	298	384	374	329	189
225	242	195	189	247	480	461	500	490	533	659	219	305	301	286	179
300	241	196	190	248	480	451	488	480	515	641	210	292	290	267	161
375	241	197	191	250	481	429	470	467	502	630	188	273	276	252	149
450	241	199	191	252	481	407	438	455	484	618	166	239	264	232	137
525	242	200	192	254	481	380	398	439	467	607	138	198	247	213	126
600	241	200	192	255	482	354	363	416	448	600	113	163	224	193	118
750	244	197	193	259	484	305	305	351	417	580	61	108	158	158	96
900	250	197	193	263	490	292	261	292	387	568	42	164	99	124	78
1050			191	268	500			254	359	562			63	91	62
1200				274					335					61	
1350				285					341					56	
1500				295					338					43	
1650				307					338					31	
1800				324					346					22	
1950				348					367					21	

Reference plane is parallel to test vehicle longitudinal centerline

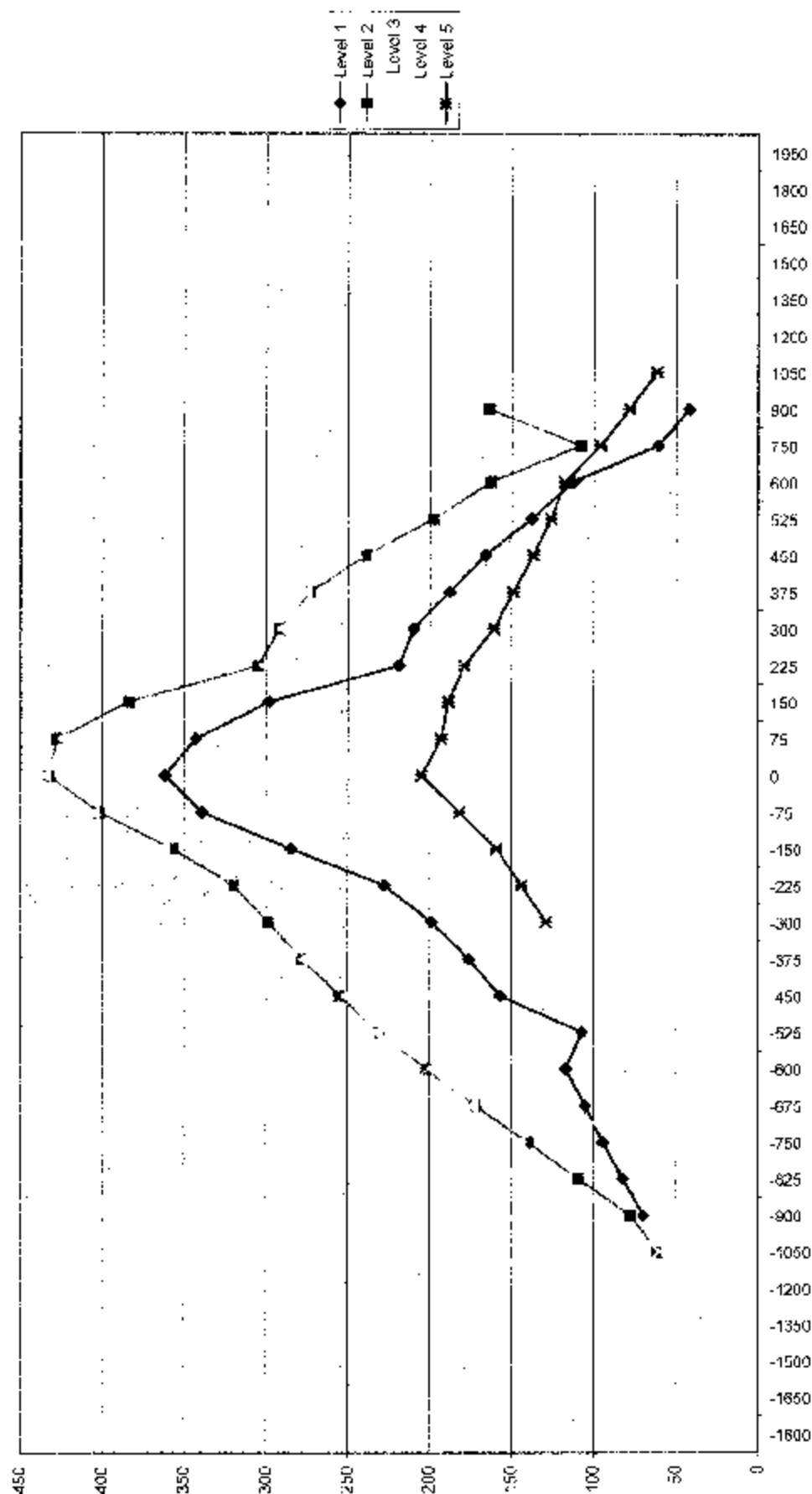
Units = mm

Given dimensions = Reference plane to car body

DATA SHEET NO. 9... (continued)

VEHICLE EXTERIOR CRUSH PROFILES

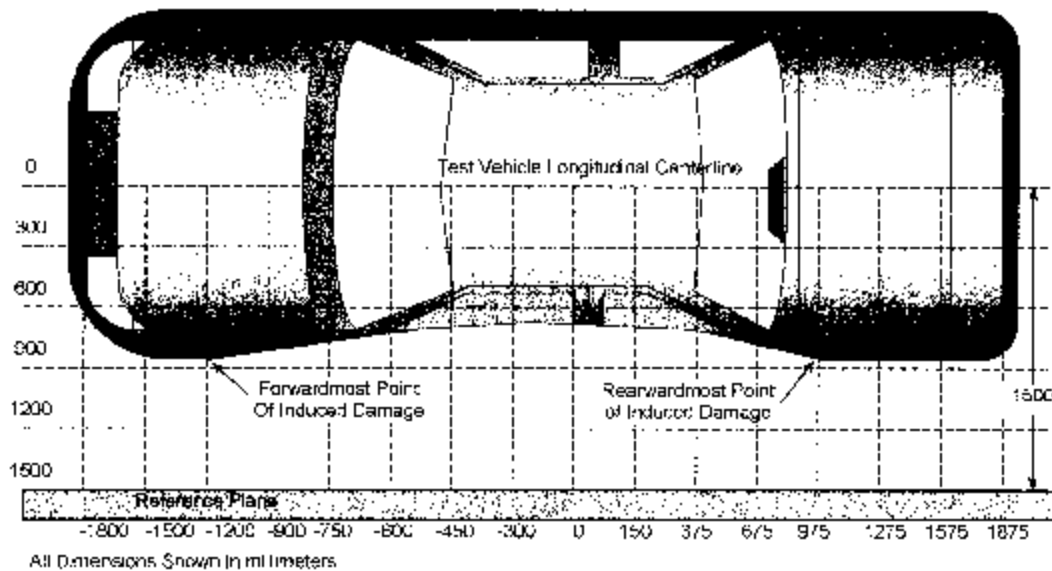
Test Vehicle: 2003 Honda Accord 4 door
 Test Program: FMVSS 201P
 NHTSA No. C35301
 Test Date: March 24, 2003



DATA SHEET NO. 10
VEHICLE DAMAGE PROFILE DISTANCES

Test Vehicle: 2003 Honda Accord 4 door
 Test Program: FMVSS 201P

NHTSA No. C35301
 Test Date: March 24, 2003



TOP VIEW

Damage Profile Distances

DPD	Distance from Impact Point in mm	Level	Pre-Test (mm)	Post-Test (mm)	Max Static Crush (mm)
1	2100 mm	4	377	394	17
2	1333 mm	4	284	337	53
3	562 mm	3	192	423	231
4	-230 mm	4	247	538	291
5	-1036 mm	4	259	319	60
6	-1800 mm	4	316	354	38

Reference plane is parallel to test vehicle longitudinal centerline

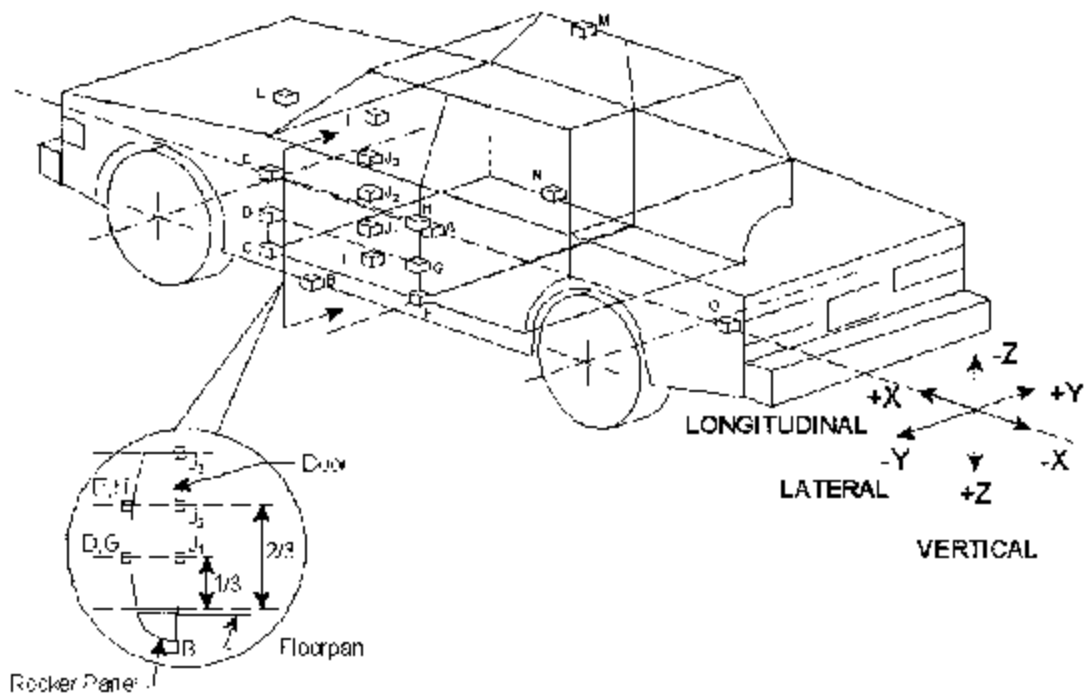
Given dimensions = Reference plane to car body

DATA SHEET NO. 11

VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Test Vehicle: 2003 Honda Accord 4 door
 Test Program: FMVSS 201P

NHTSA No. C35301
 Test Date: March 24, 2003



No.	Location
A	Vehicle CG
B	Left Floor Sill
C	A Pillar Sill
D	A Pillar Low
E	A Pillar Mid
G	B Pillar Sill
H	B Pillar Low
I	B Pillar Mid

No.	Location
L	Driver Seat
M1	Driver Door Rib
M2	Driver Door Pelvis
M3	Driver Door Knee
N	Engine
O	Firewall
Q	Right Floor Sill
R	Rear Deck

DATA SHEET NO. 11... (continued)

VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY

Test Vehicle: 2003 Honda Accord 4 door
 Test Program: FMVSS 201P

NHTSA No. C35301
 Test Date: March 24, 2003

VEHICLE ACCELEROMETER PEAK DATA AND PRE-TEST LOCATIONS

Loc. No.	Accelerometer Location	Peak Values (G's)				
		Axis	Max	Time	Min	Time
A	Vehicle CG	X	3.1	34	-3.6	22
		Y	15.7	40	-0.1	175
		Z	7.7	74	-8.0	35
		RES	16.6	73		
B	Left Floor Sill	Y	35.7	16	-0.9	28
C	A Pillar Sill	Y	17.5	17	-0.3	1
D	A Pillar Low	Y	31.2	71	-10.0	37
E	A Pillar Mid	Y	12.7	62	-2.6	3
G	B Pillar Sill	Y	35.2	16	-4.1	66
H	B Pillar Low	Y	85.2	16	-8.4	102
I	B Pillar Mid	Y	50.4	18	-14.4	24
L	Driver Seat	Y	83.2	32	-8.2	23
M1	Driver Door Rib	Y	65.8	10	-24.4	24
M2	Driver Door Pelvis	Y	126.2	17	-114.3	34
M3	Driver Door Knee	Y	84.8	10	-63.7	19
N	Engine	X	3.2	122	-6.1	43
		Y	10.2	77	-1.7	200
O	Firewall	Y	11.0	74	-0.7	4
Q	Right Floor Sill	Y	13.4	19	-0.4	192
R	Rear Deck	X	4.2	22	-2.9	73
		Y	11.2	93	-2.1	200

Positive Acceleration Polarities: Longitudinal (X) = + Forward
 (Conforms to SAE J211) Lateral (Y) = + Right
 Vertical (Z) = + Down

DATA SHEET NO. 11... (continued)

VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY

Test Vehicle: 2003 Honda Accord 4 door

NHTSA No. C35301

Test Program: FMVSS 201P

Test Date: March 24, 2003

VEHICLE ACCELEROMETER PEAK DATA AND PRE-TEST LOCATIONS

Loc. No.	Accelerometer Location	Axis	Measurements (mm)		
			Pre-Test	Post-Test	Difference
A	Vehicle CG	X	2606	2563	-43
		Y	0	0	0
		Z	-450	-444	6
B	Left Floor Sill	X	2928	2827	-101
		Y	-740	-721	19
		Z	-220	-224	-4
C	A Pillar Sill	X	3236	3225	-11
		Y	-652	-632	20
		Z	-325	-312	13
D	A Pillar Low	X	3334	3241	-93
		Y	-820	-791	29
		Z	-562	-560	2
E	A Pillar Mid	X	3334	3246	-88
		Y	-810	-784	26
		Z	-740	-730	10
G	B Pillar Sill	X	2152	2144	-8
		Y	-675	-589	86
		Z	-325	-313	12
H	B Pillar Low	X	2140	2129	-11
		Y	-710	-547	163
		Z	-432	-425	7
I	B Pillar Mid	X	2120	2116	-4
		Y	-700	-535	165
		Z	-930	-933	-3
L	Driver Seat	X	2345	2190	-155
		Y	-560	-444	116
		Z	-315	-308	7
M1	Driver Door Rib	X	2440	2404	-36
		Y	-756	-574	182
		Z	-718	-716	2
M2	Driver Door Pelvis	X	2438	2400	-38
		Y	-765	-595	170
		Z	-880	-880	0
M3	Driver Door Knee	X	2860	2775	-85
		Y	-777	-684	93
		Z	-672	-675	-3
N	Engine	X	3952	3908	-44
		Y	0	0	0
		Z	-895	-897	2
O	Firewall	X	3714	3641	-73
		Y	0	0	0
		Z	-935	-935	0
Q	Right Floor Sill	X	2398	2410	12
		Y	705	698	7
		Z	-232	-227	5
R	Rear Deck	X	810	823	13
		Y	0	0	0
		Z	-382	-400	-18

Reference Points

X – Rear of Vehicle (+ forward)

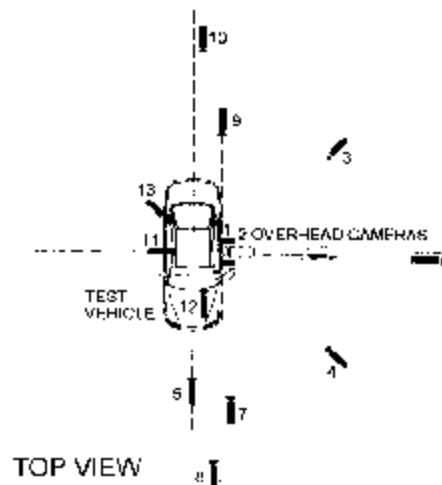
Y – Vehicle Centerline (+ to right)

Z – Ground Plane (+ down)

DATA SHEET NO. 12
HIGH SPEED CAMERA LOCATIONS AND DATA

Test Vehicle: 2003 Honda Accord 4 door
 Test Program: FMVSS 201P

NHTSA No. C35301
 Test Date: March 24, 2003



No.	Camera View	Location (mm)			Lens (mm)	Film Speed (fps)
		X	Y	Z		
1	Overhead Overall	-800	0	-5000	8	1036
2	Overhead Close-Up	0	0	-5000	13	1031
3	Left Side 45° Rearward Pole View	2450	-5300	-1300	35	1036
4	Right Side 45° Forward Pole View	2540	3400	-1310	35	1020
5	Real Time				13	24
6*	Left Side Rear Pole View					
7	Front Ground Level Vehicle/Pole Impact	100	8510	-1410	25	1042
8	Front Ground Level Vehicle Roof Targets and Vehicle/Pole Impact	-920	8560	-1570	25	826
9	Rear Ground Level Vehicle/Pole Impact	700	-9640	-1590	25	1005
10	Rear Ground Level	-70	-9120	-1410	25	1026
11	Test Vehicle Onboard Driver Side View				8	521
12	Test Vehicle Onboard Driver Front View				13	513
13	Test Vehicle Onboard Driver ¾ Rear View				13	524

Reference Points X - + Forward of Impact
 Y - + Right of Impact
 Z - + Ground Plane Down

* Camera 6 was not used for this test.

DATA SHEET NO. 13

FMVSS 301 FUEL SYSTEM INTEGRITY POST IMPACT DATA

Test Vehicle: 2003 Honda Accord 4 door
Test Program: FMVSS 201P

NHTSA No. C35301
Test Date: March 24, 2003

Test Time: 12:35 PM Temperature at Time of Impact: 21°C

Stoddard Solvent Spillage Measurements

- A. From impact until vehicle motion ceases: 0
(Maximum Allowable = 1 ounce)
- B. For the 5 minute period after motion ceases: 0
(Maximum allowable = 5 ounces)
- C. For the following 25 minutes: 0
(Maximum allowable = 1 oz./minute)
- D. Spillage Details: None

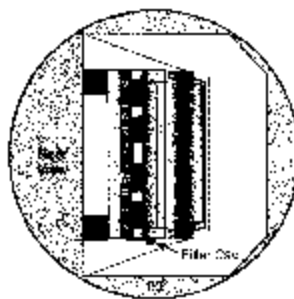
DATA SHEET NO. 14
FMVSS 301 STATIC ROLLOVER DATA SHEET

Test Vehicle: 2003 Honda Accord 4 door
 Test Program: FMVSS 201P

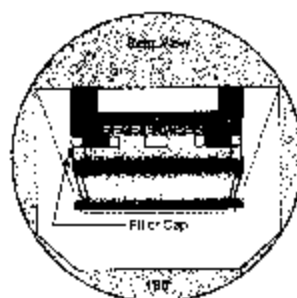
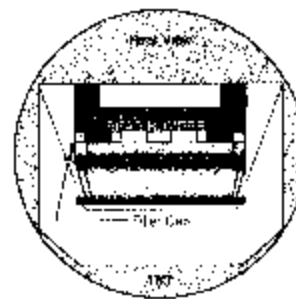
NHTSA No. C35301
 Test Date: March 24, 2003



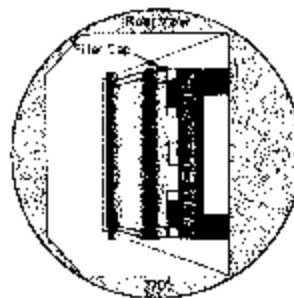
0° to 90°



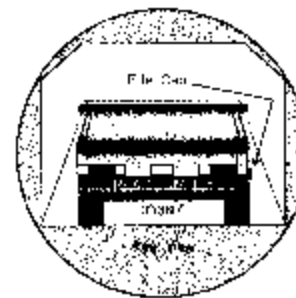
90° to 180°



180° to 270°



270° to 360°



1. The specified fixture rollover rate for each 90° of rotation is 60 to 180 seconds.
2. The position hold time at each position is 300 seconds (minimum).
3. Details of Stoddard Solvent Spillage locations: None

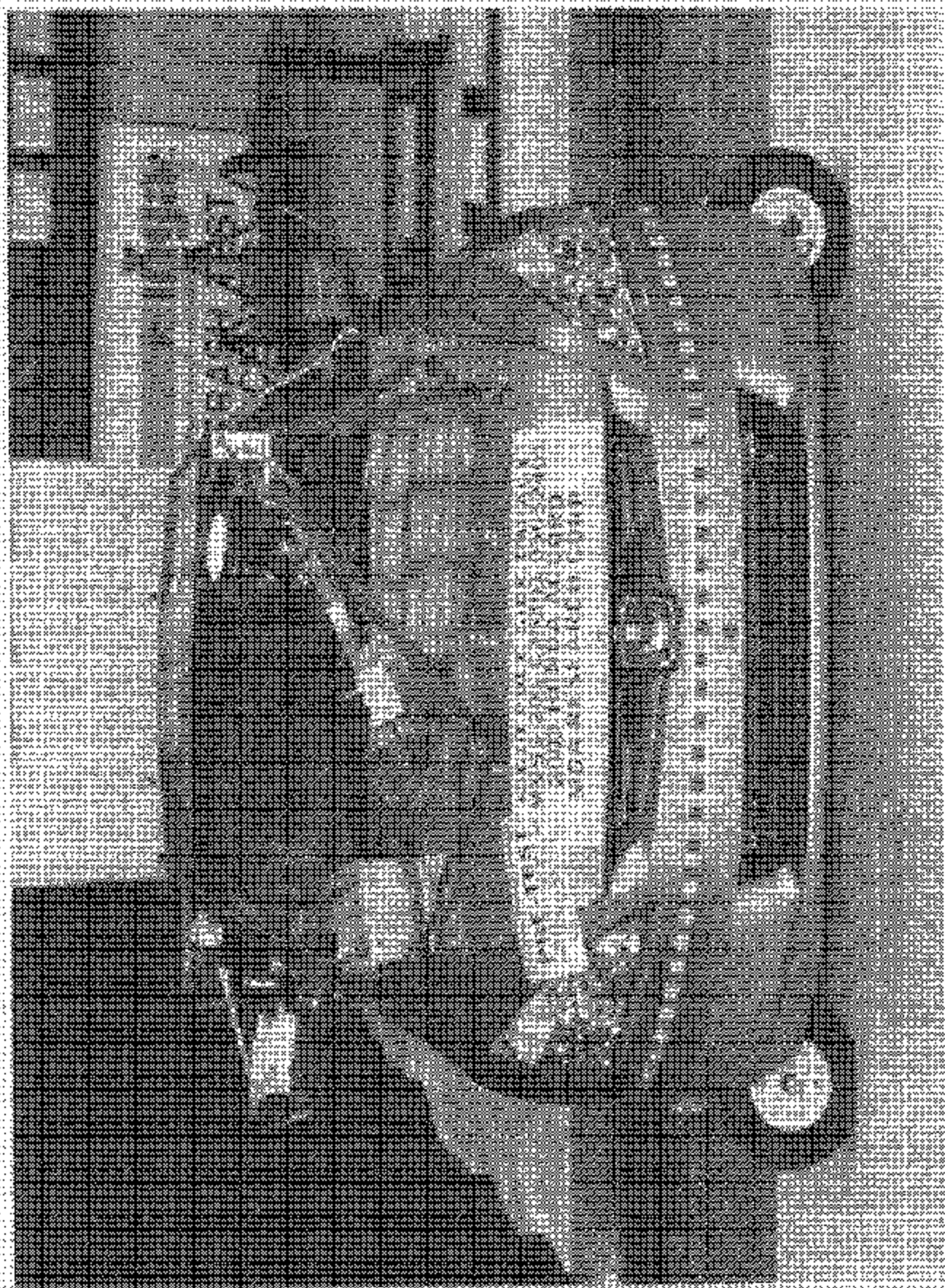
Rollover Test Phase	Rotation Time (sec.)	Hold Time (sec.)	Spillage (oz.)
0° to 90°	169	300	0
90° to 180°	152	300	0
180° to 270°	136	300	0
270° to 360°	159	300	0

APPENDIX A
PHOTOGRAPHS

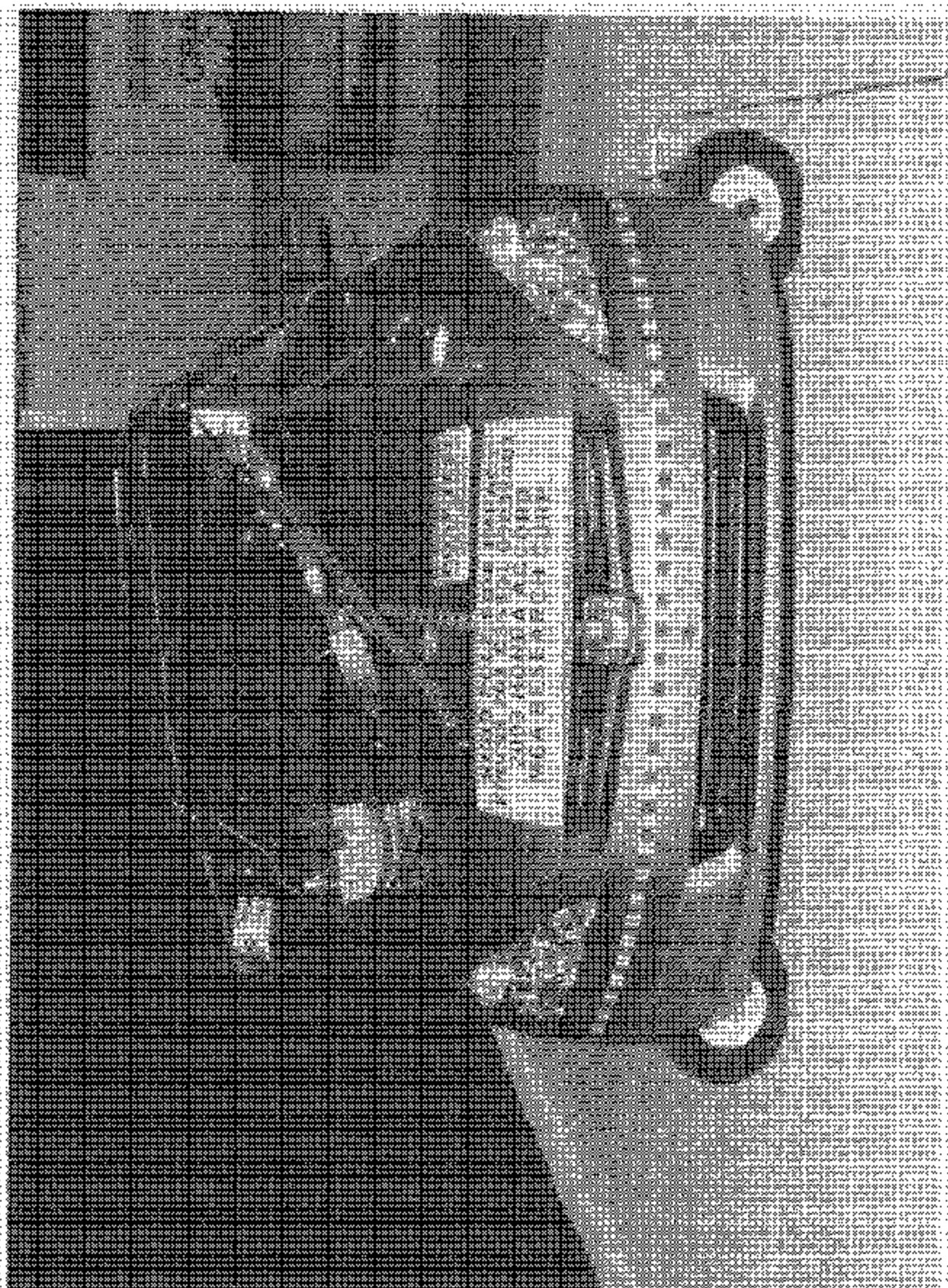
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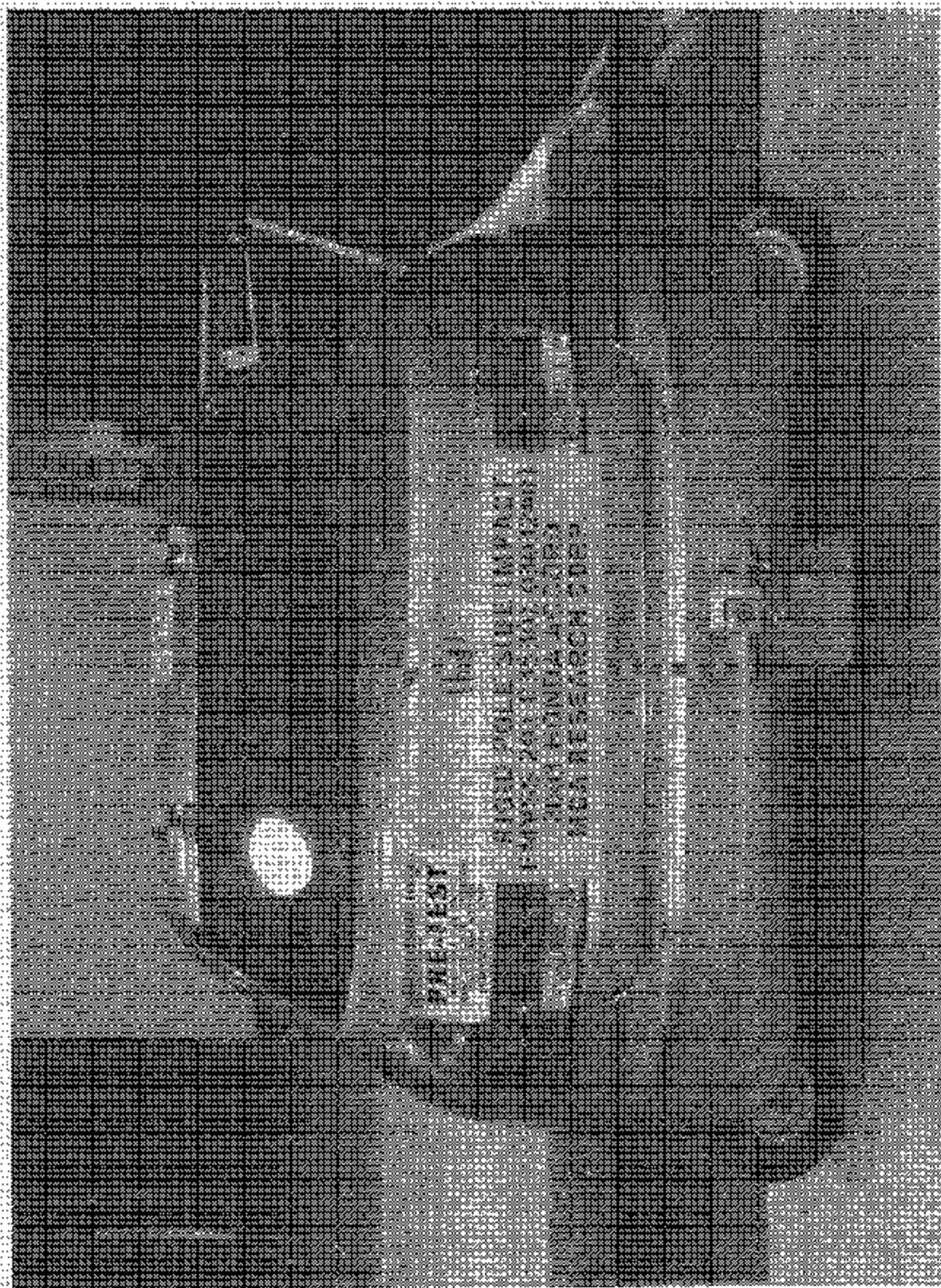
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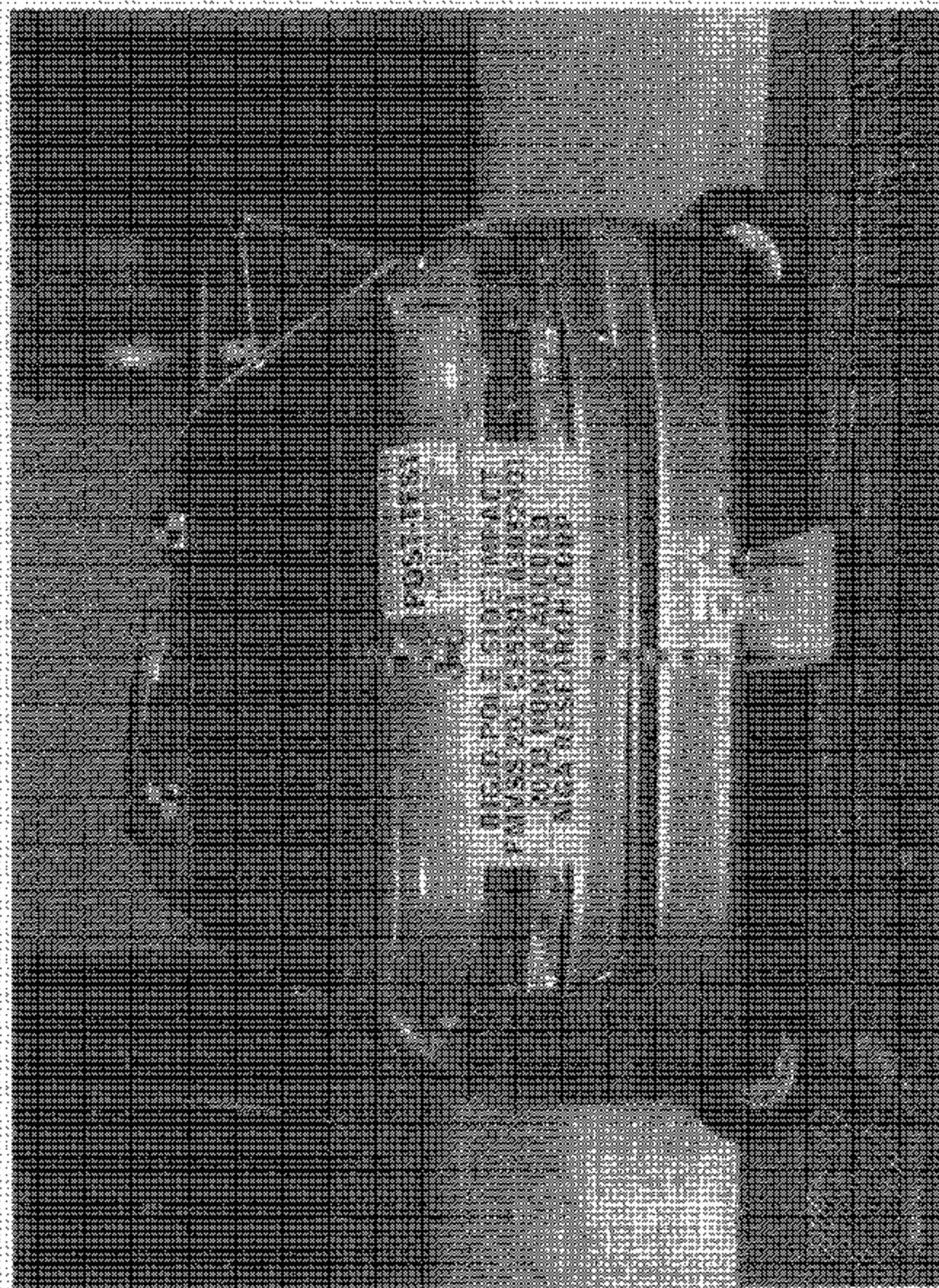
Front-left view of test vehicle



Post: West Front View of 1930s Sedan



Pre-Test View of Test Object



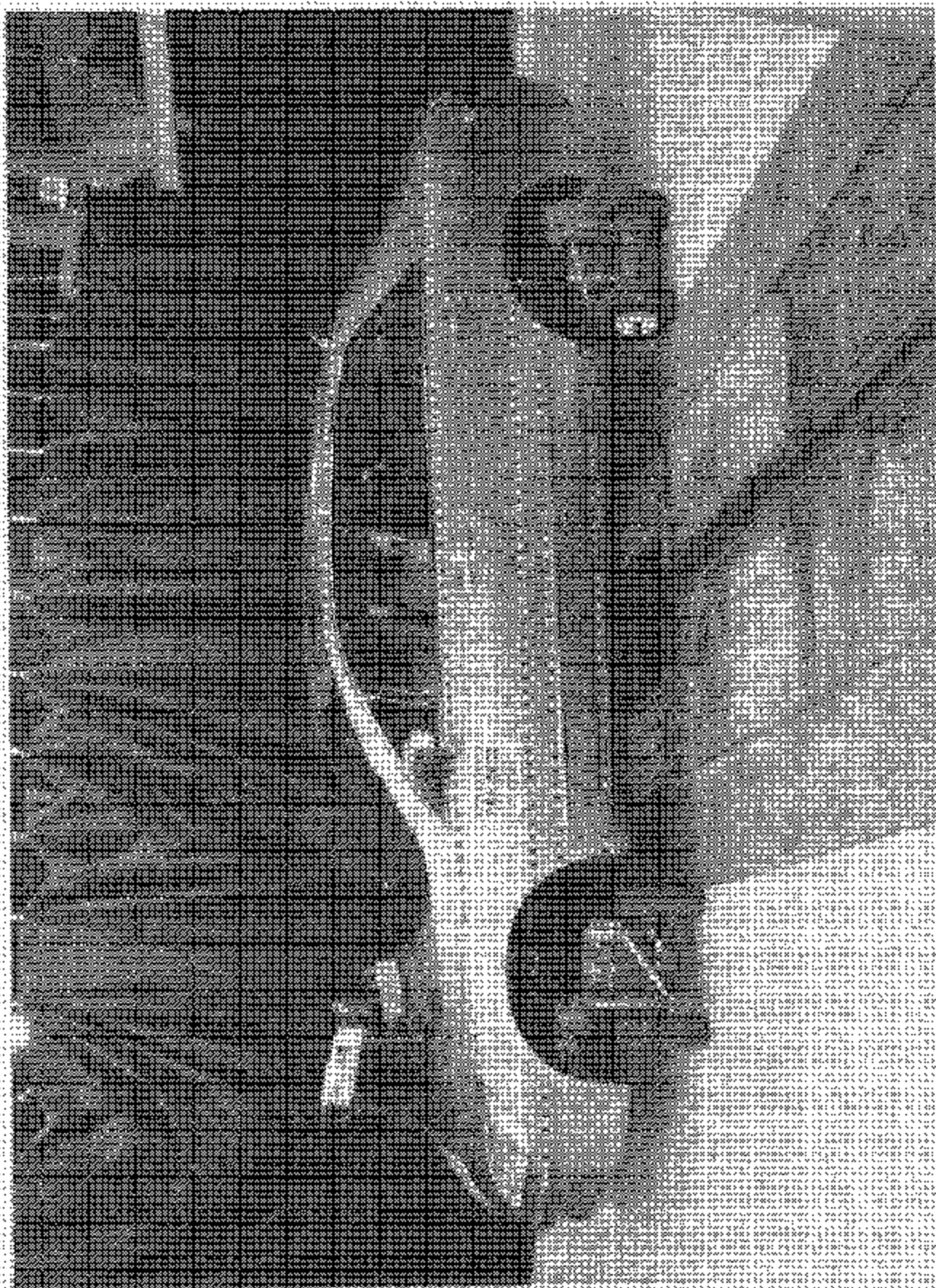
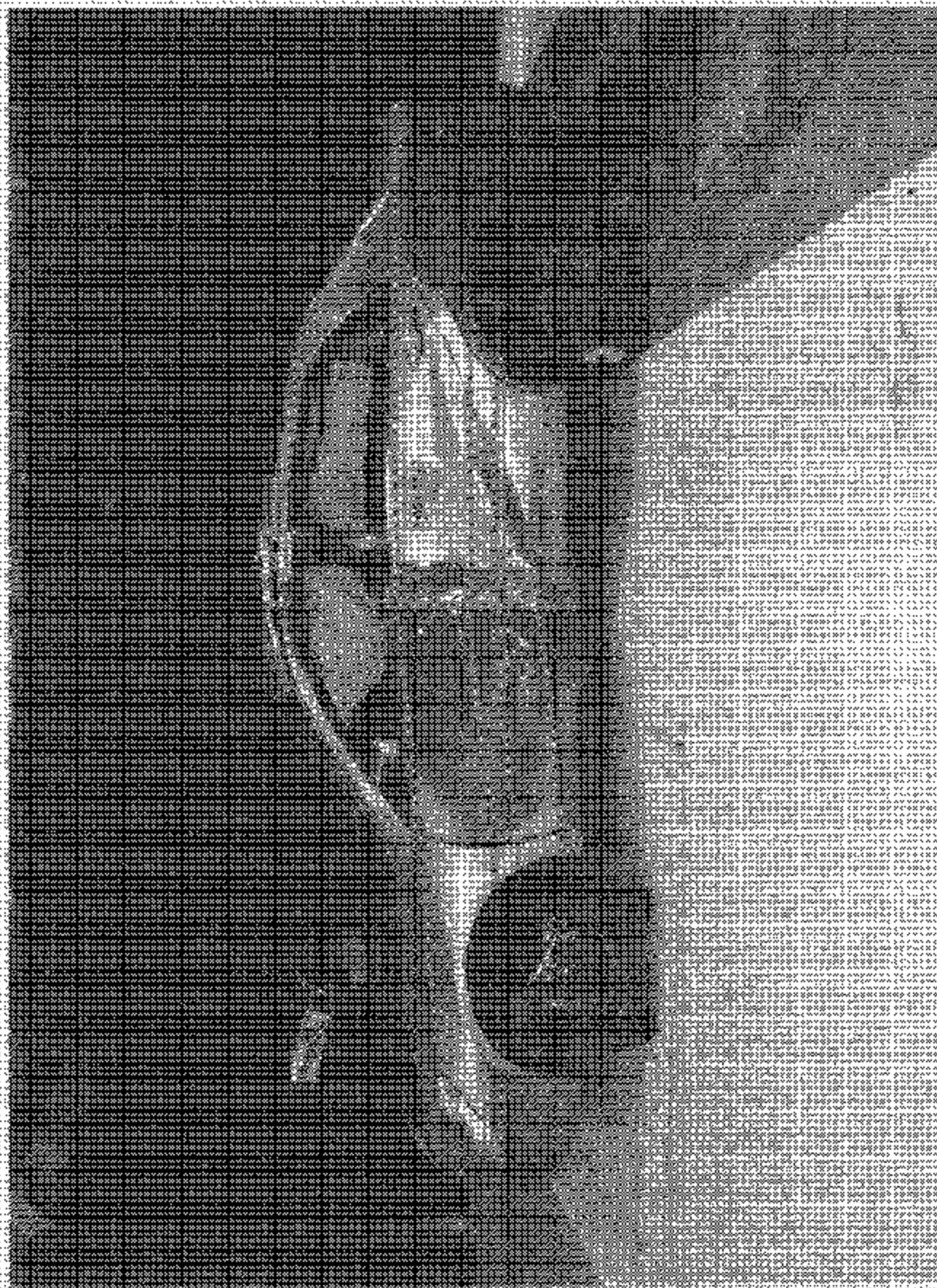
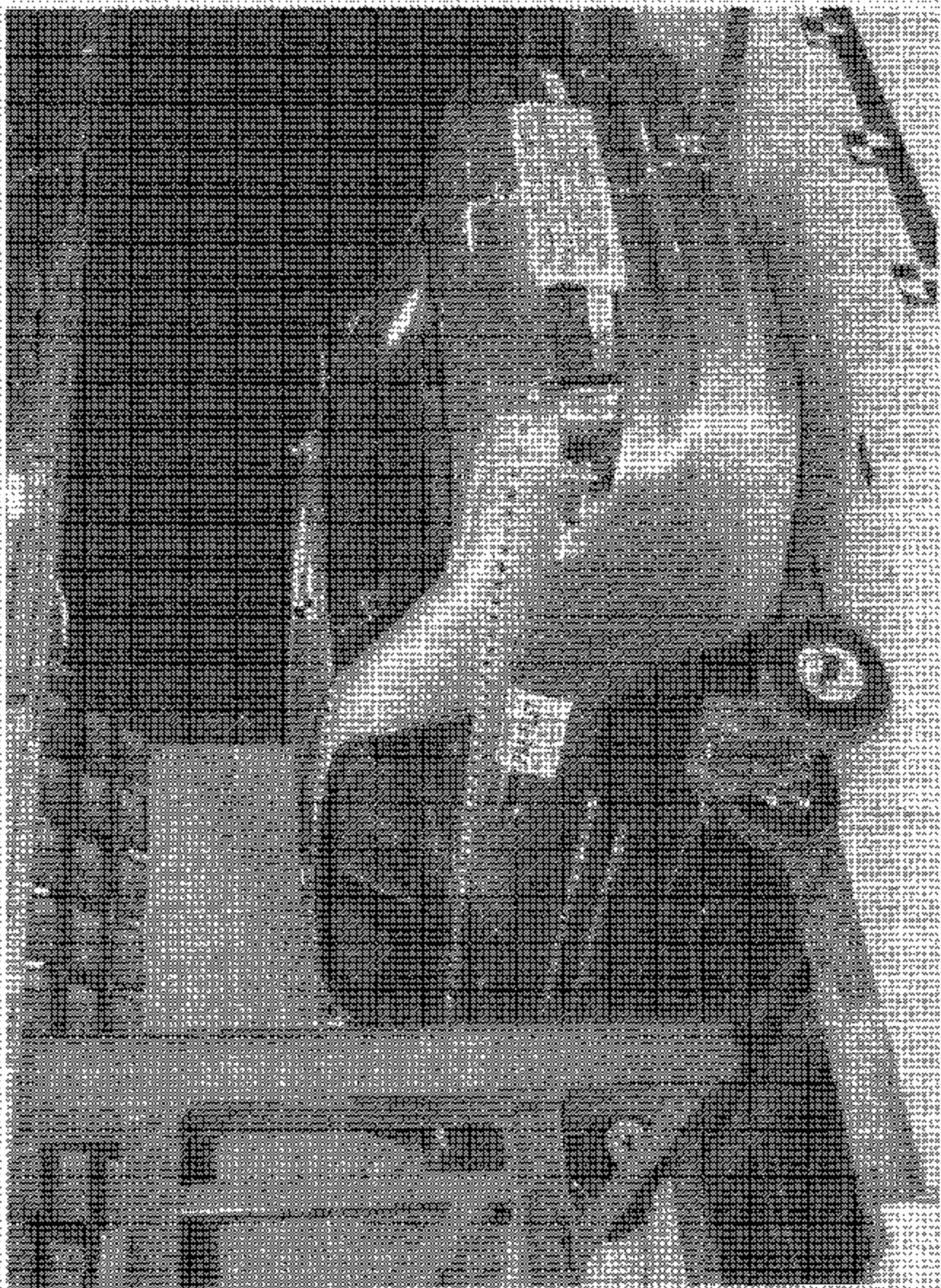


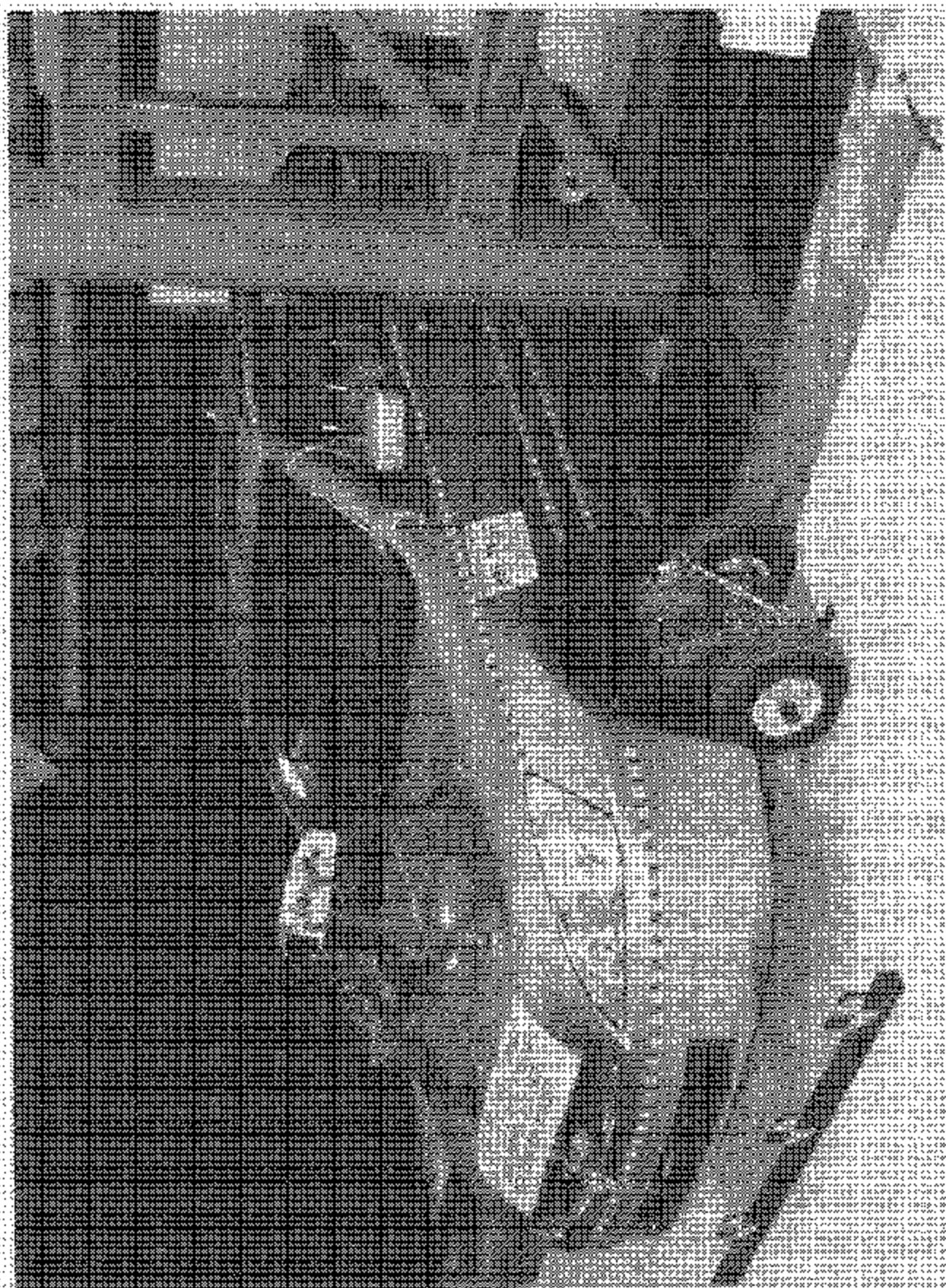
Photo 1 - Rear View of 1981 Vehicle



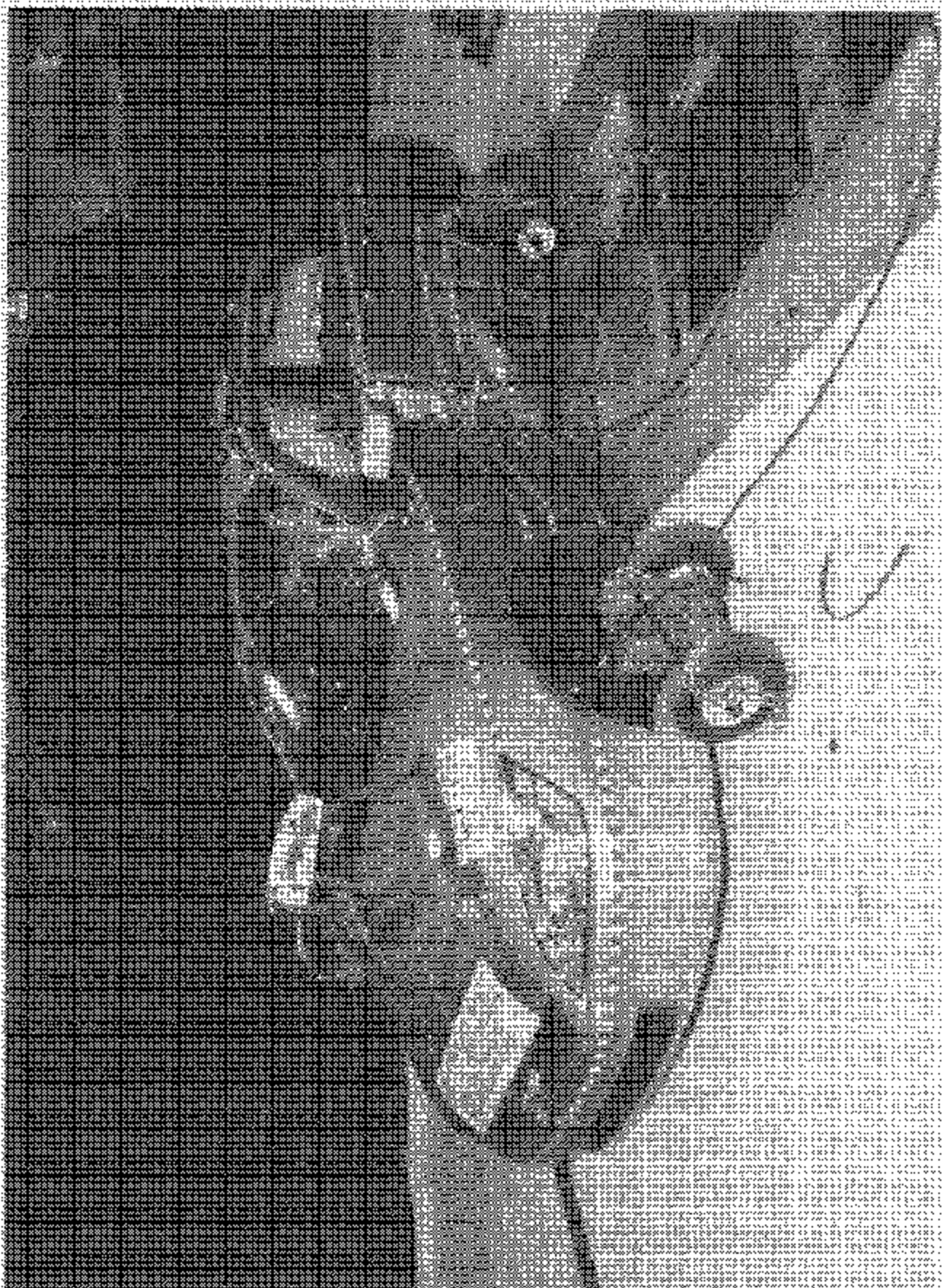
Portrait of Lee Sae-yeon of the Voice



Front-Viewed Rear View of Quarter View



Pro-Test Let's go! Three-Quam: New



Post Test Left Front Three Quarter View

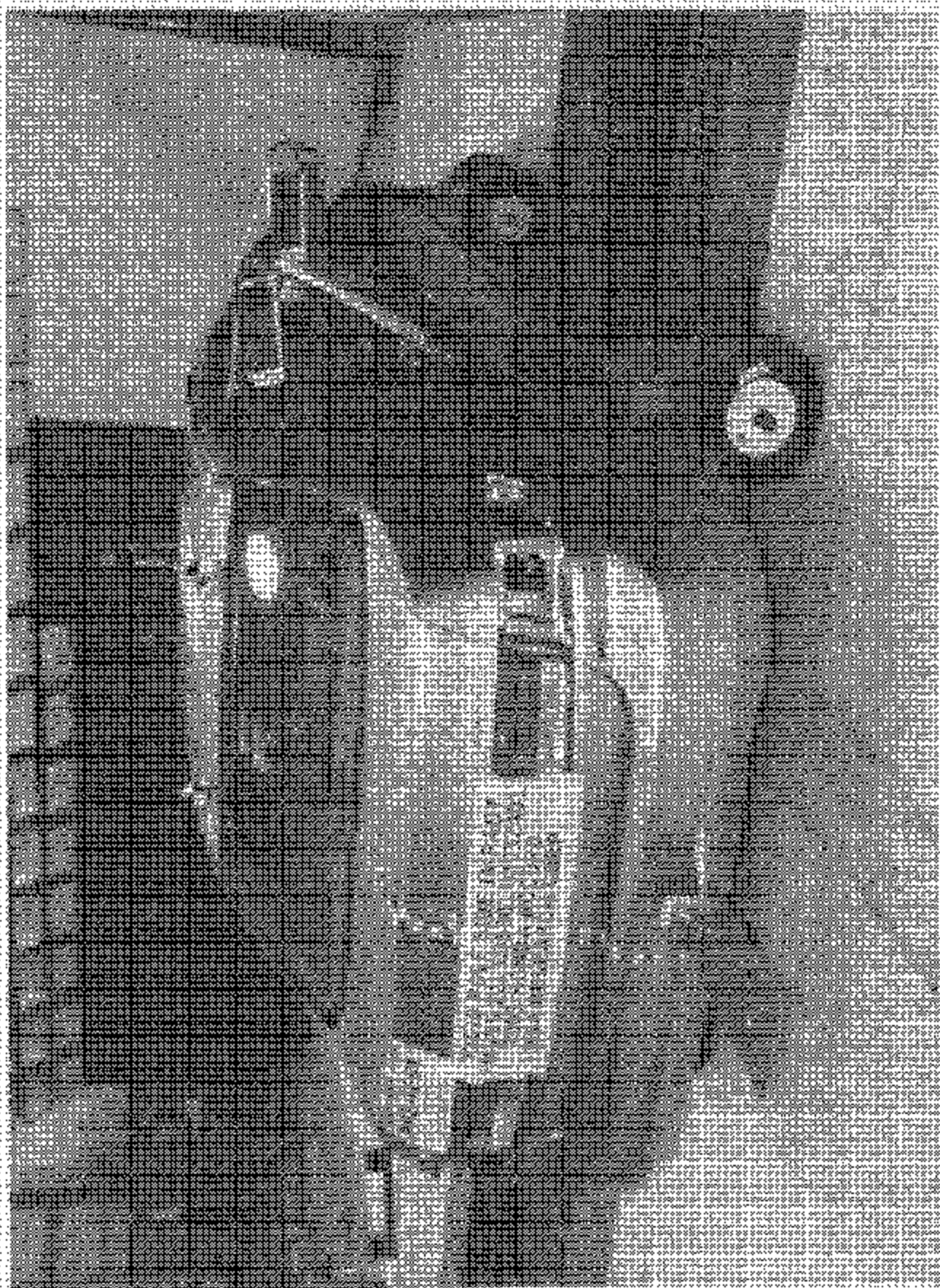
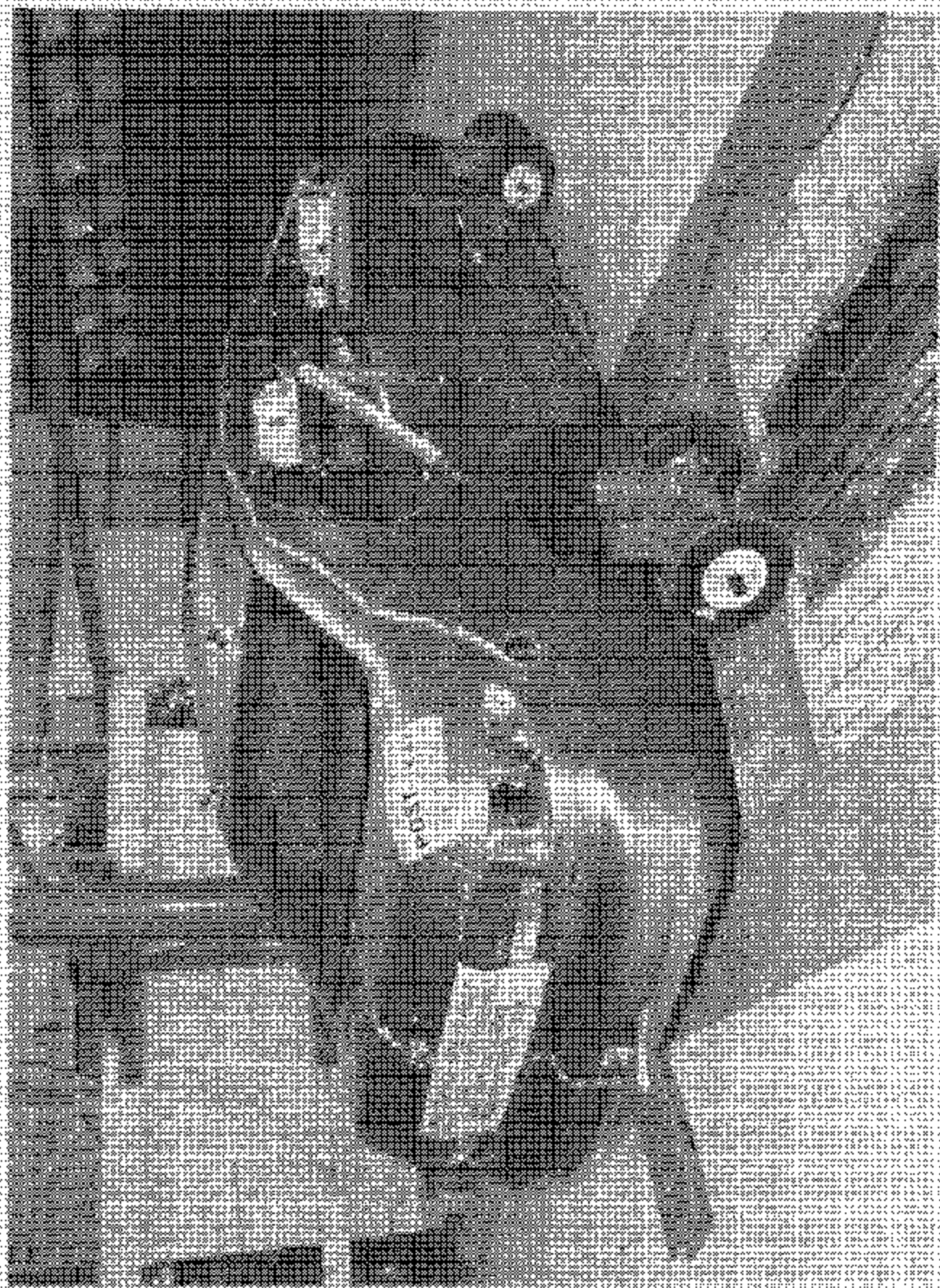


Fig. 10. Right Hand Front Quarter View



Post Test Right Rear Three Quarter View

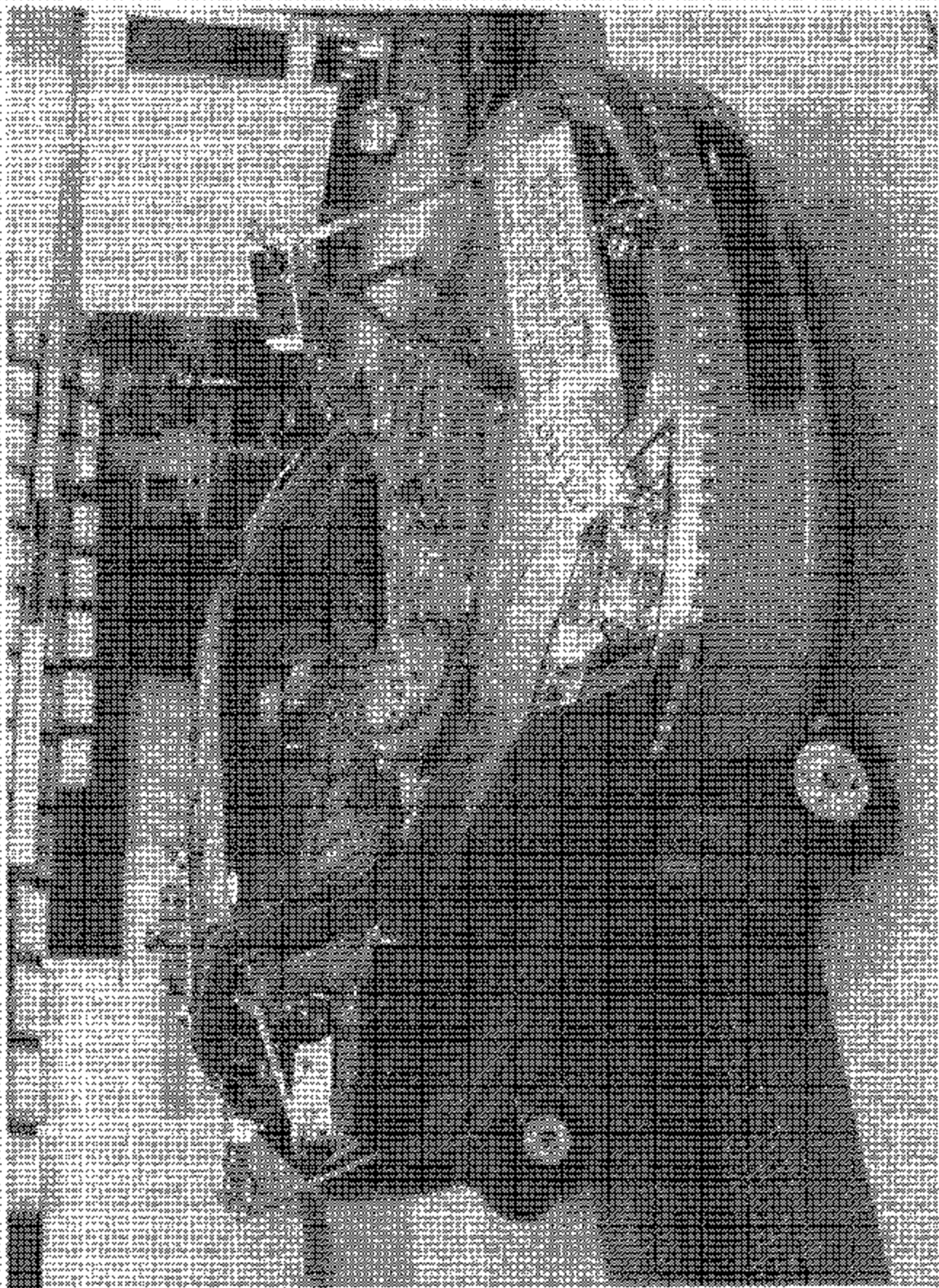
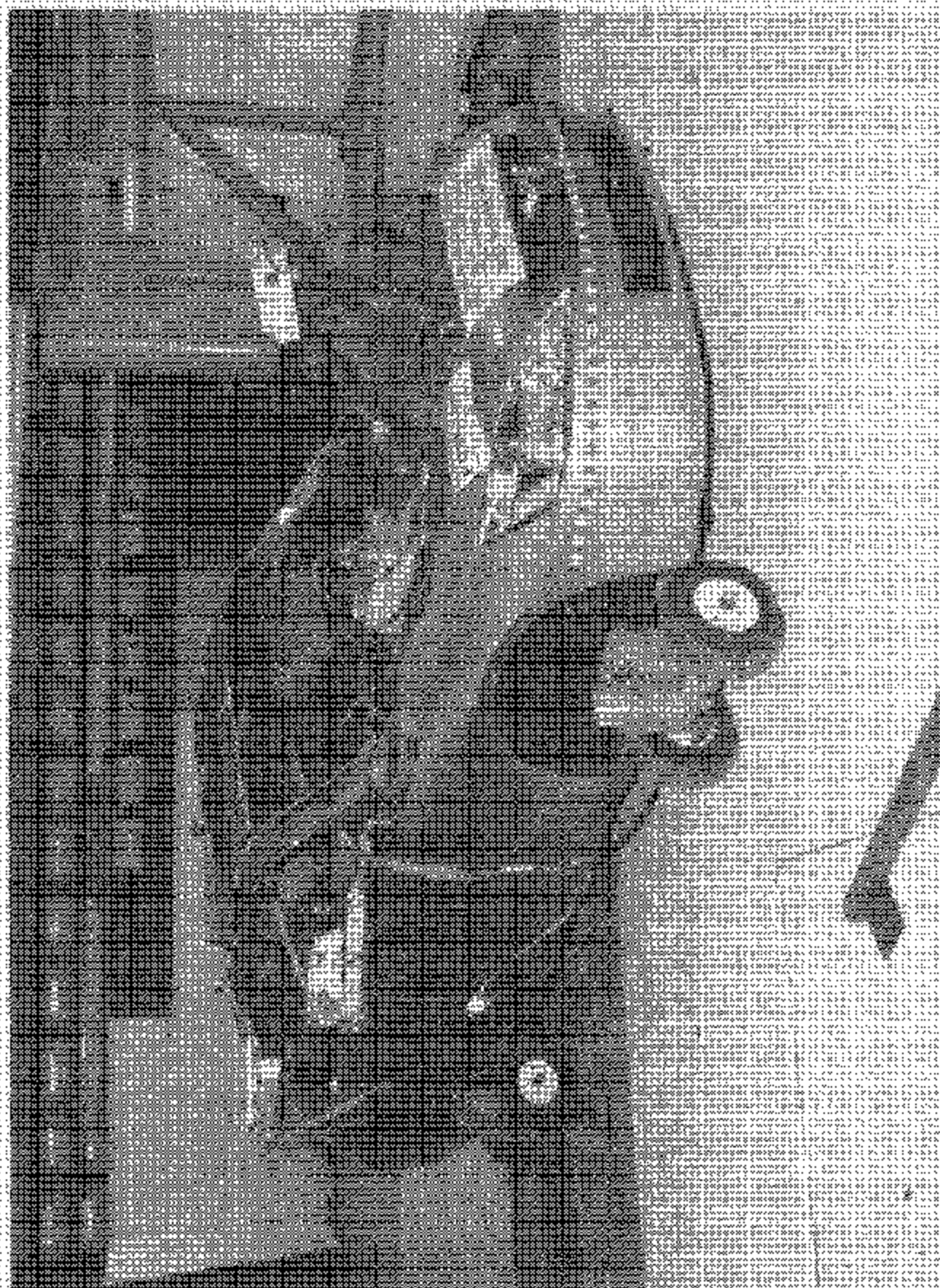


Photo Right: Front Three Quarter View



Post-Test Right From Three-Gunner View

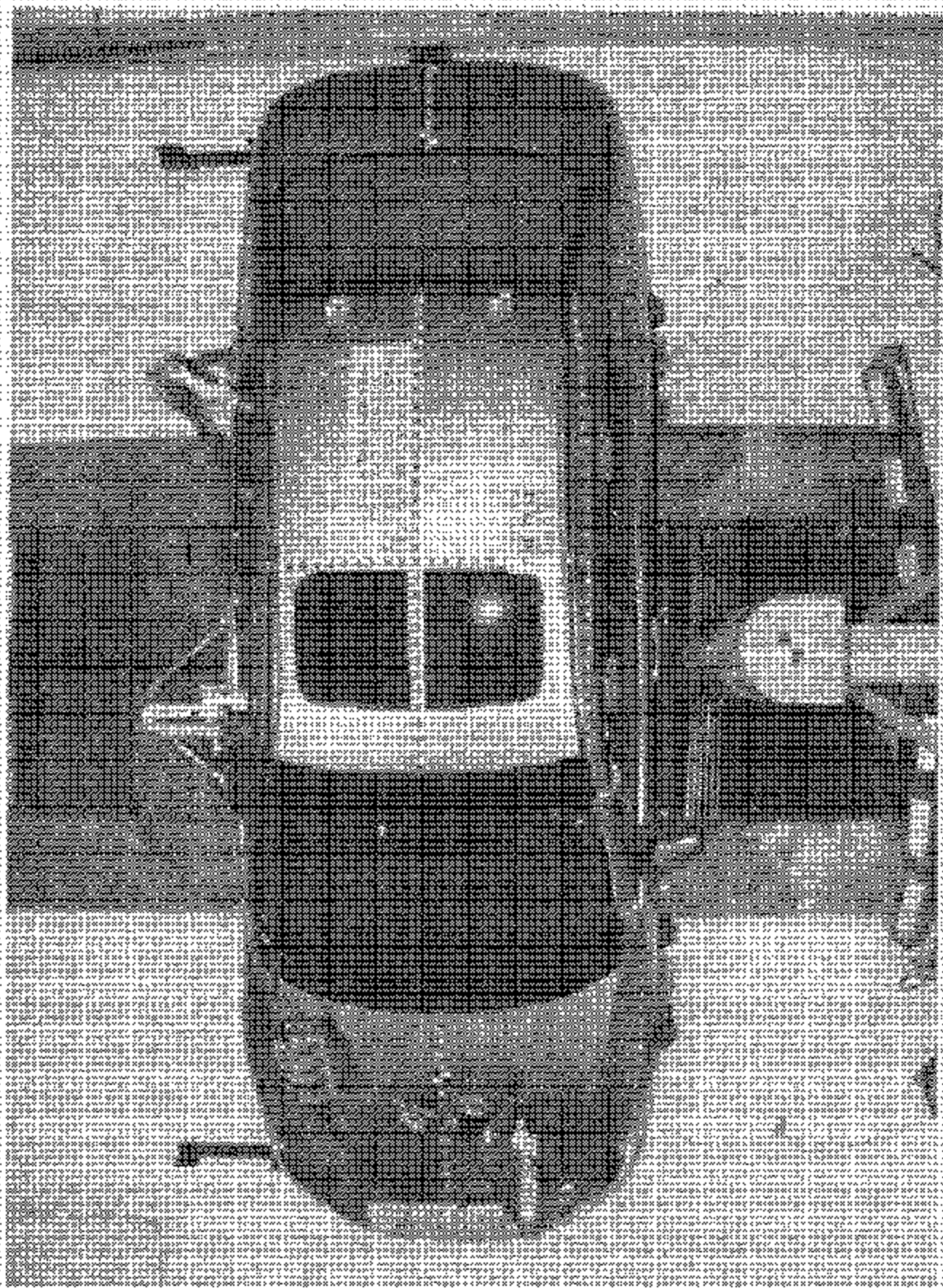
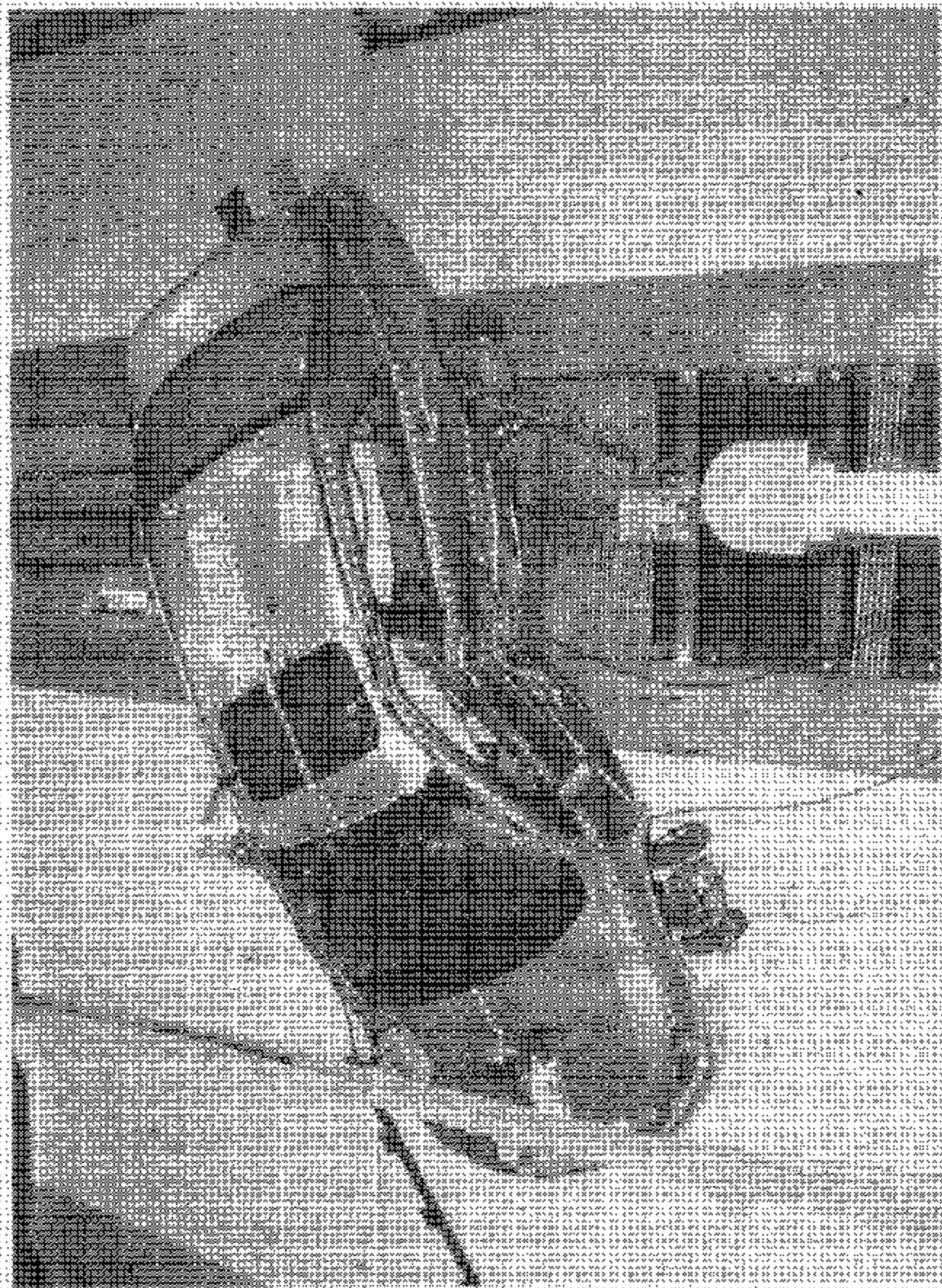
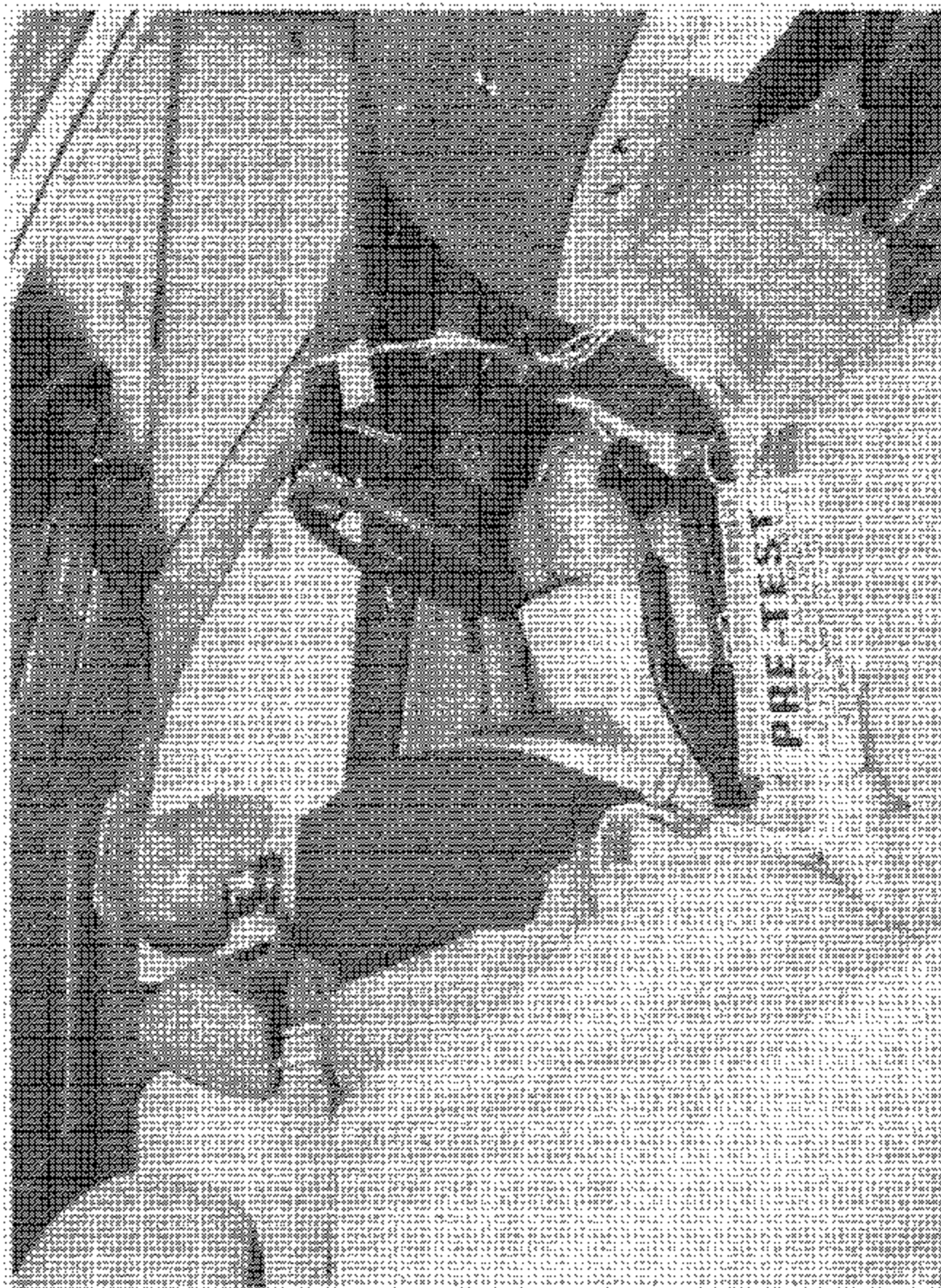


FIG. 1. Over-the-Shoulder View of Test Vehicle



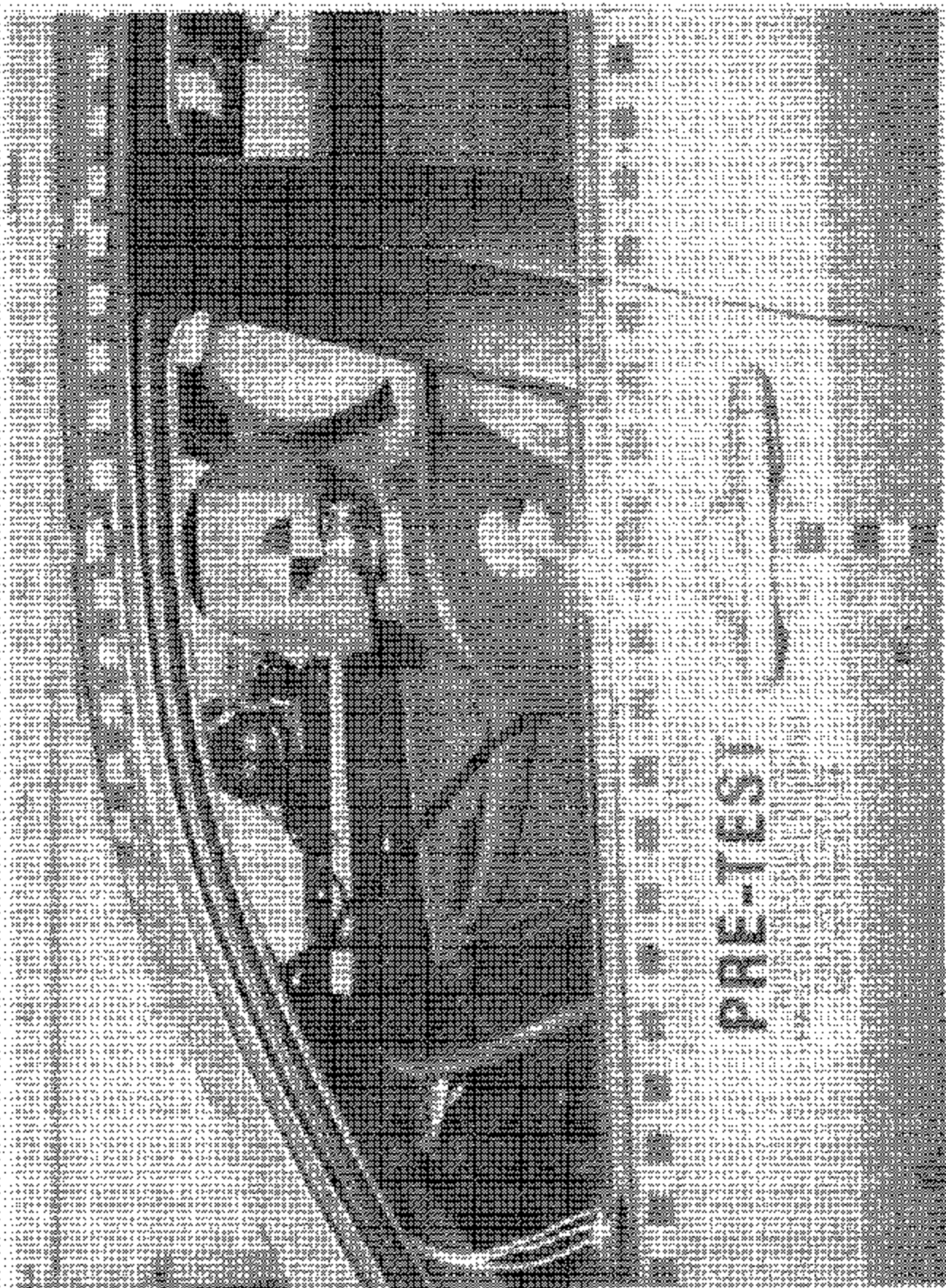
Post-Test Overhead View of Test Vehicle



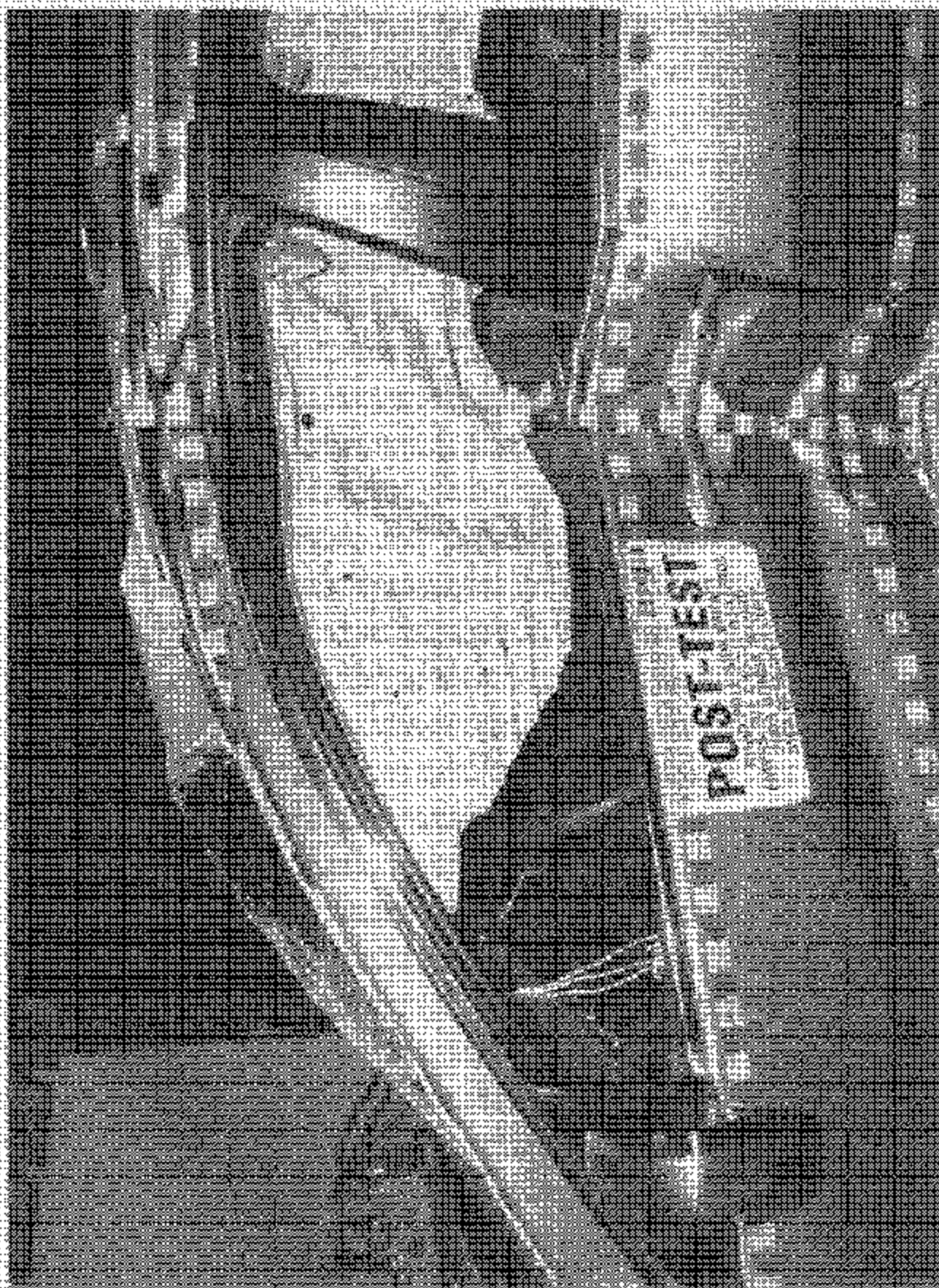
Plato's Cave: A man in a suit and tie, looking down at a small object in his hands.



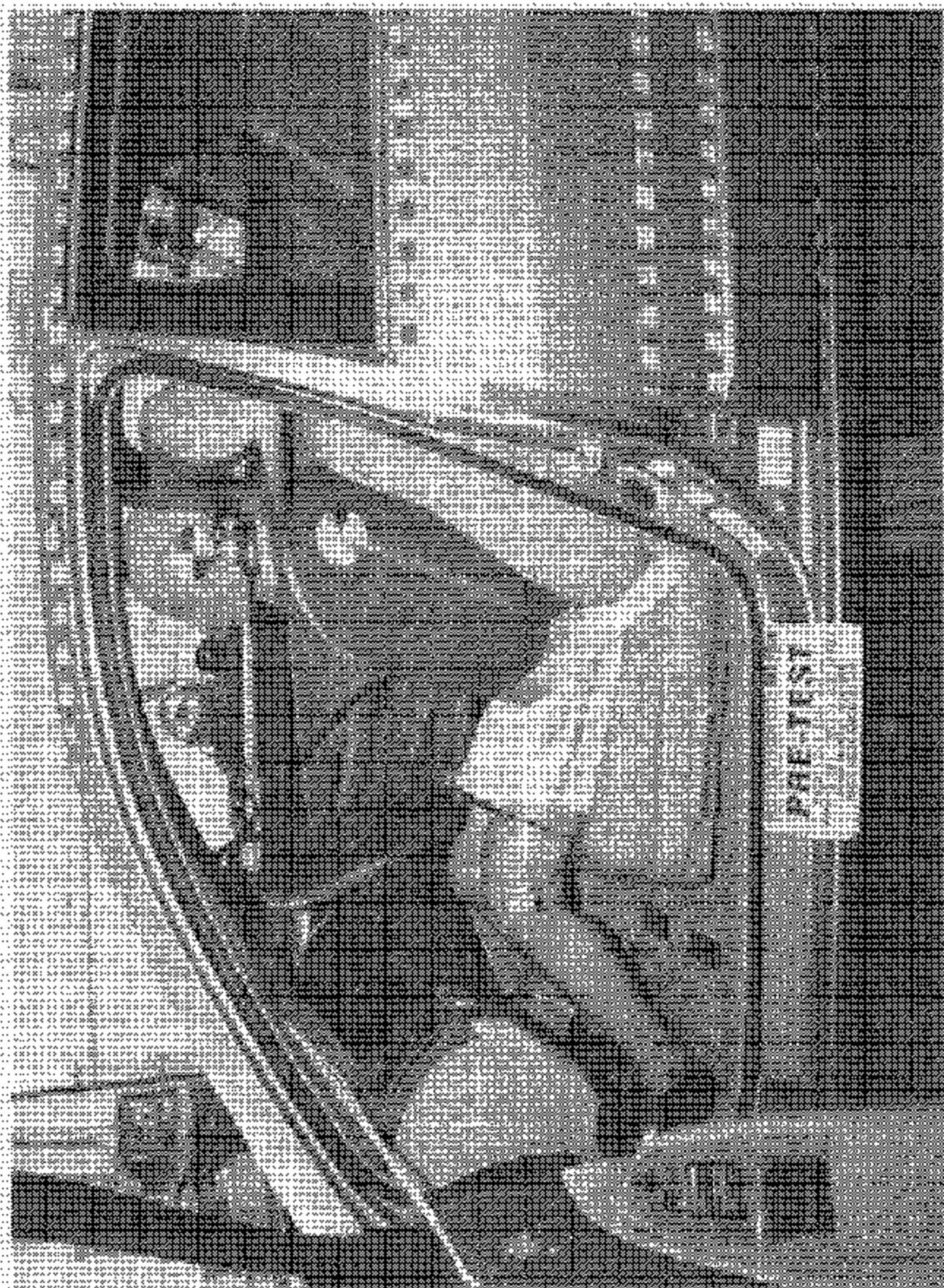
Post-Test Drive: Curry Right Side View



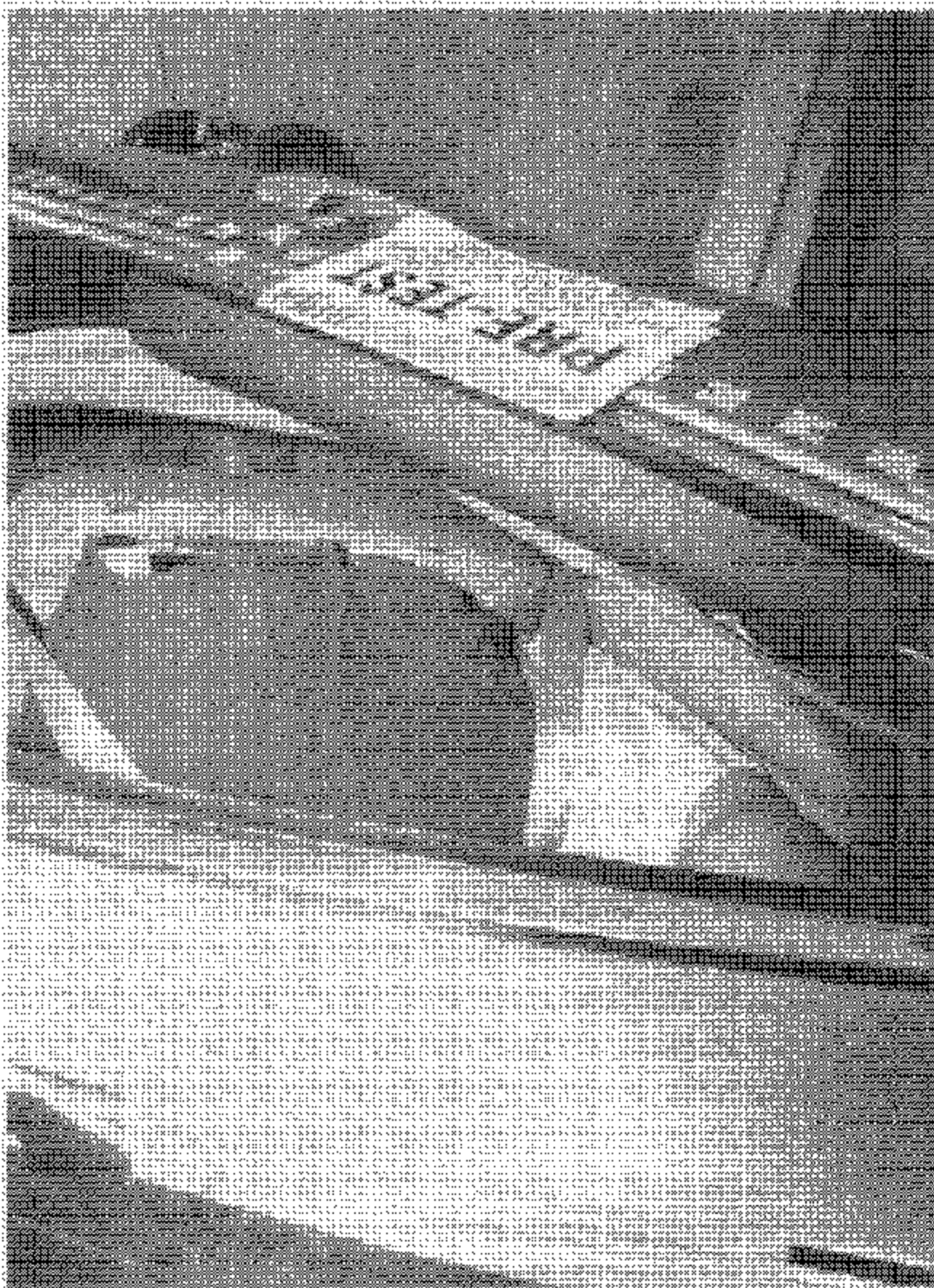
The Test Driver Dummy Left Side View



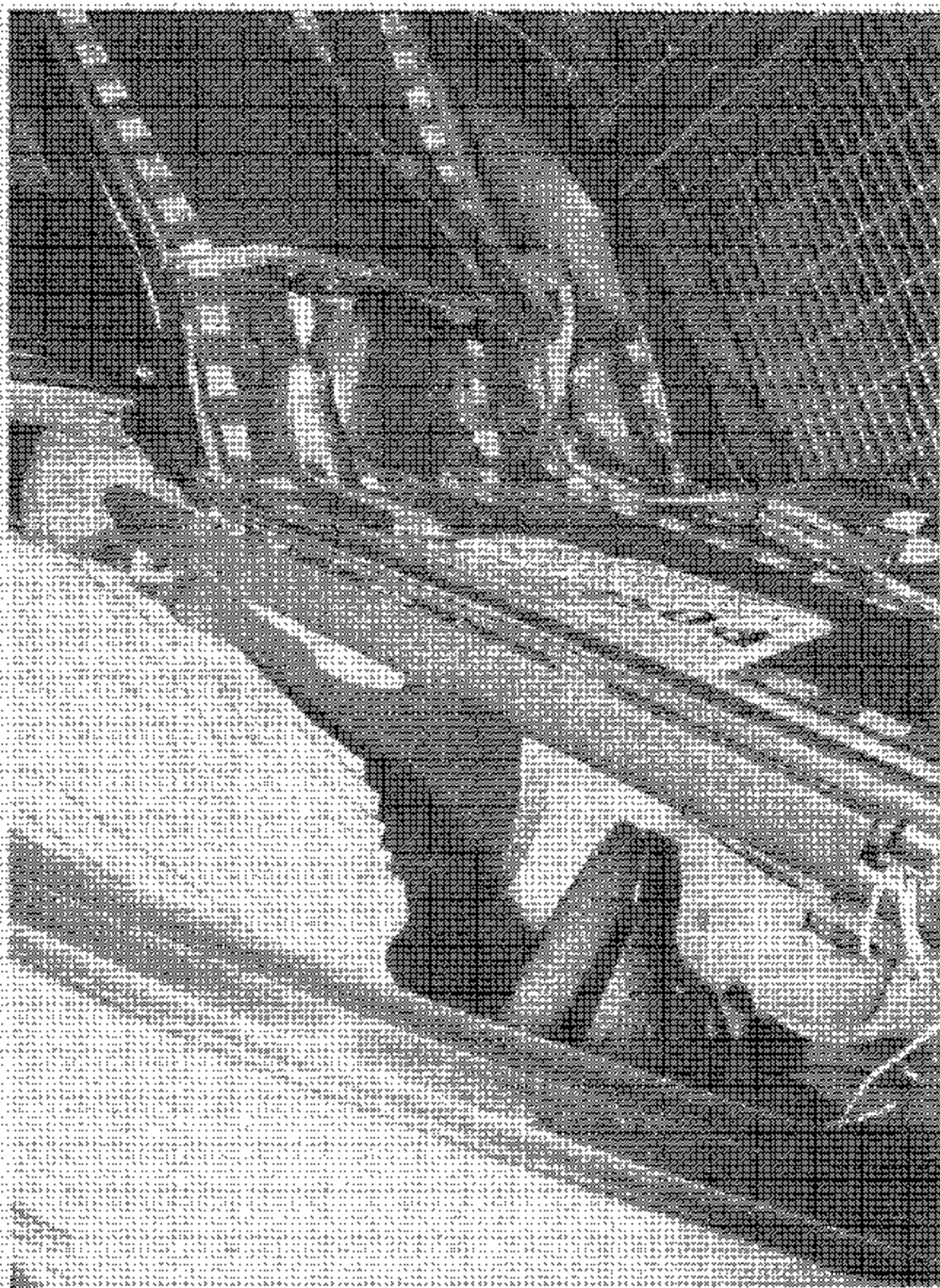
POST-TEST Driver Dummy Left Side View

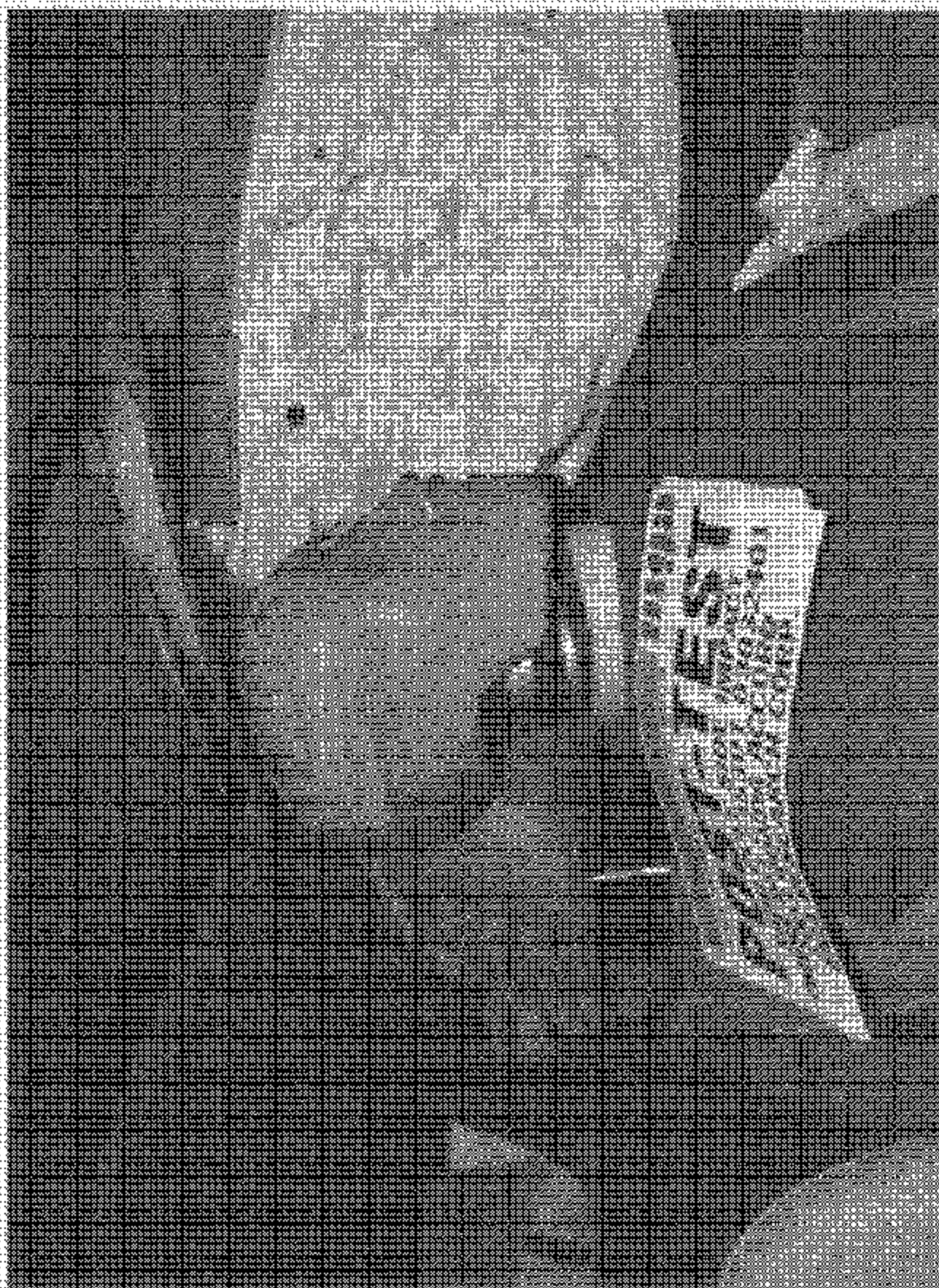


Pre-Test Dura-Durham Pipe, Side View (Door Open)



Pre-Test Driver Cursing Shoulder and Door Top View





Post-Tens (Over) Timothy Jones Contact



POST-TEST
STUDY
RESULTS
OF THE
NATIONAL
ACADEMY
OF SCIENCES
AND
ENGINEERING
RESEARCH BOARD

POST-TEST STUDY RESULTS COLLECT

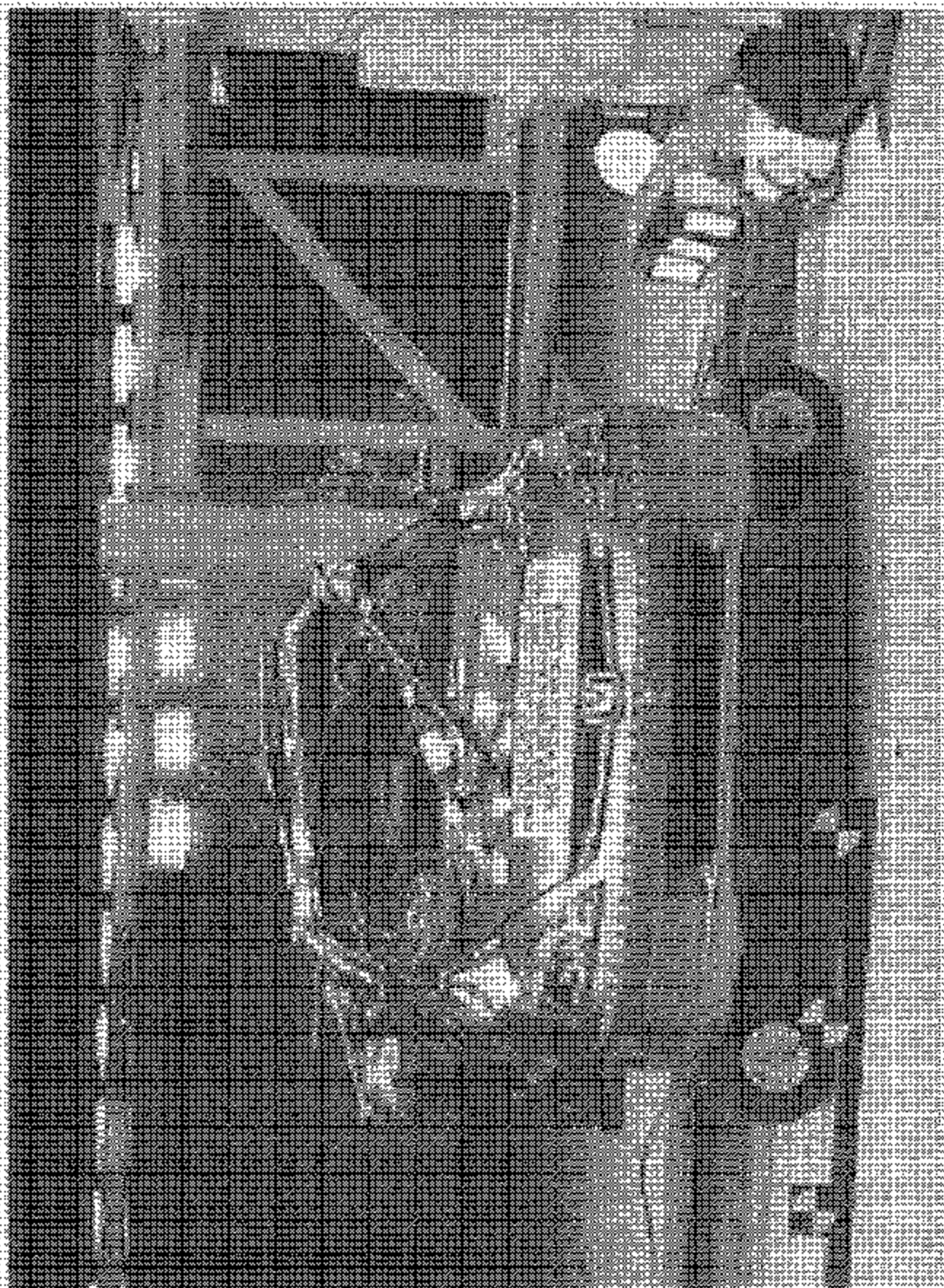


Post-Test Liver Biopsy, Corbett

POSTER

RIGID POLE SIDE IMPACT
FMVSS 201 C35201 03032481
2003 HONDA ACCORD
MGA RESEARCH CORP

POSTER FOR FMVSS 201 C35201 03032481



10/15/54

MFD. BY HONDA OF AMERICA MFG. INC. 9/02

GVWR 4300LBS GAWR 2360LBS R 2005LBS

THIS VEHICLE CONFORMS TO ALL APPLICABLE
FEDERAL MOTOR VEHICLE SAFETY, BUMPER,
AND THEFT PREVENTION STANDARDS IN EFFECT
ON THE DATE OF MANUFACTURE SHOWN ABOVE:

VIN. 1HGCM66523A007359



PASSENGER CAR

Vehicle Certification Label

TIRE INFORMATION

VEHICLE CAPACITY WEIGHT		SEATING CAPACITY	
850 LBS (385KG)		TOTAL 5 FRONT 2 REAR 3	
RECOMMENDED TIRE SIZE		COLD TIRE INFLATION PRESSURE	
P205/60R16 91V		FRONT	220KPA, 32PSI
		REAR	210KPA, 30PSI
COMPACT SPARE TIRE		UP TO VEHICLE CAPACITY WEIGHT	
T135/90D15 100M		420KPA, 60PSI	

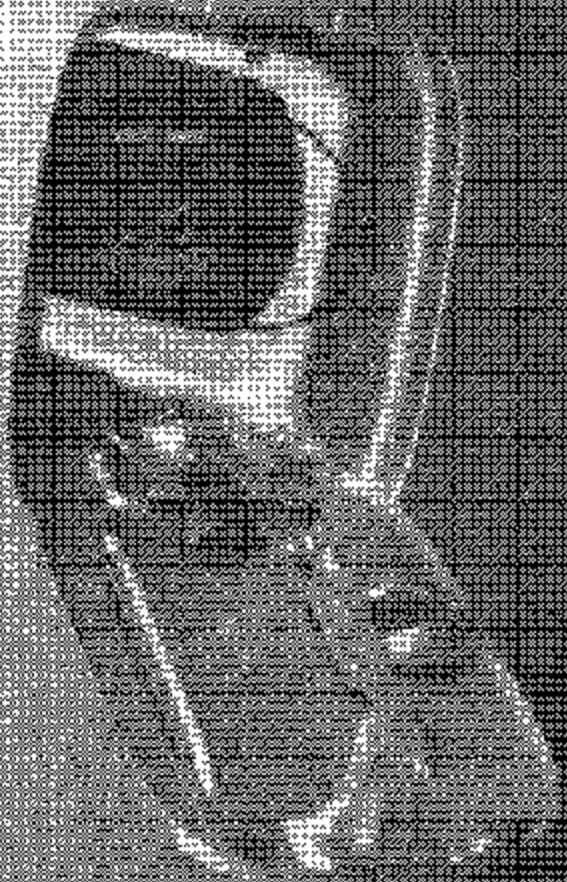
SEE OWNERS
MANUAL FOR
ADDITIONAL
INFORMATION

4702-303-400

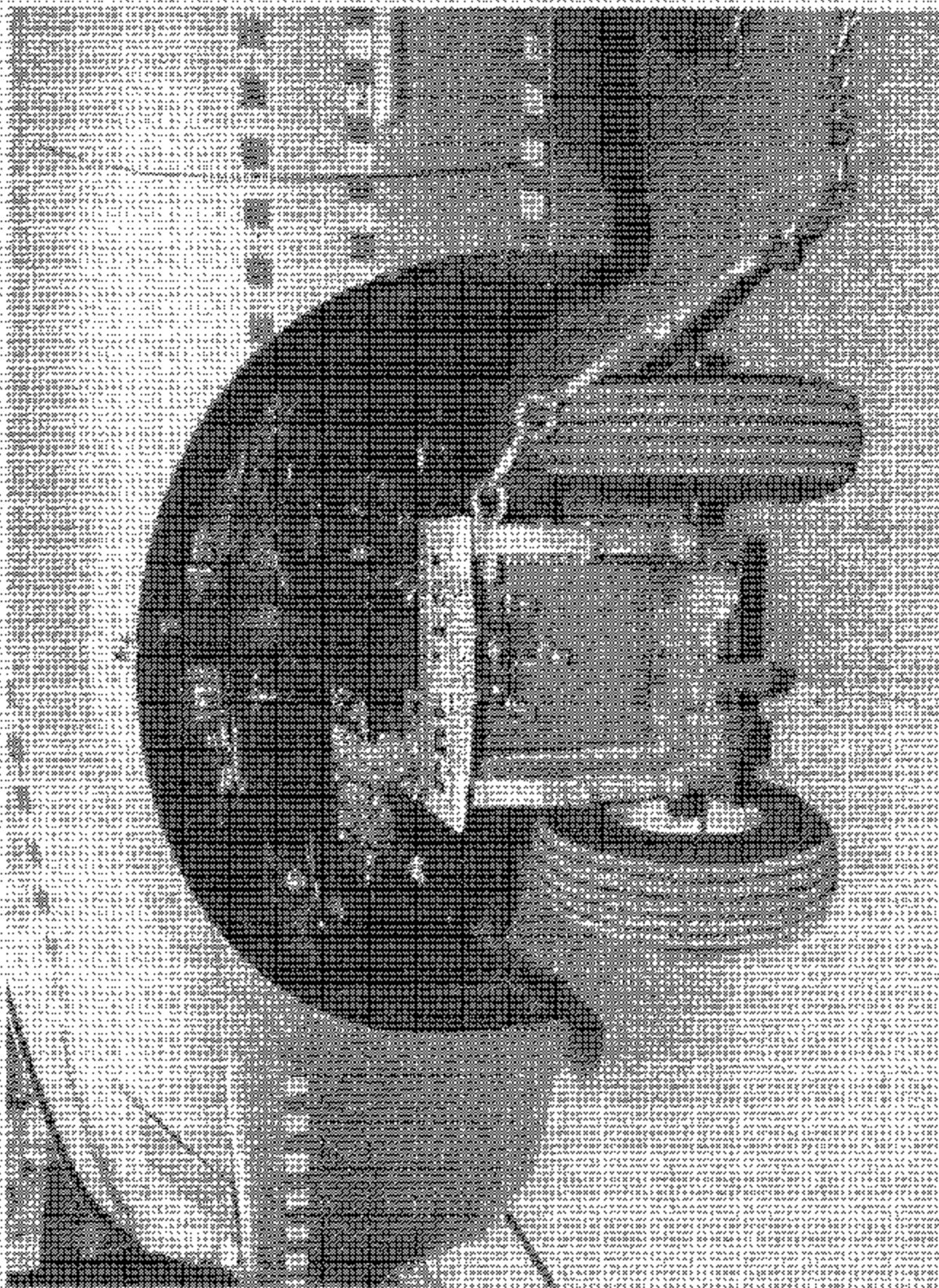
Tire Placard

PRE-TEST

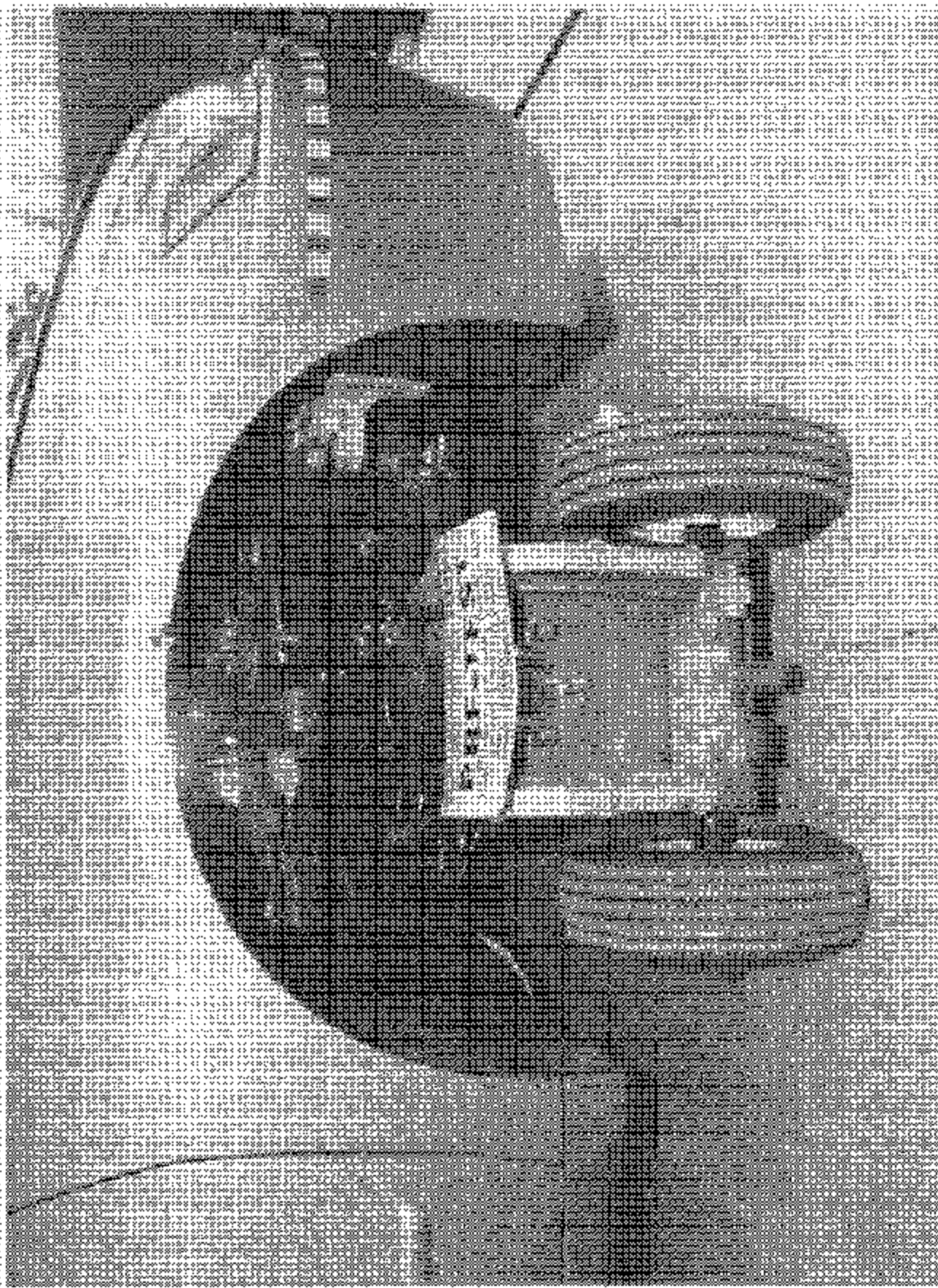
RIGID POLE SIDE IMPACT
FMVSS 201 C35301 03032401
2003 HONDA ACCORD
HGA RESEARCH CORP



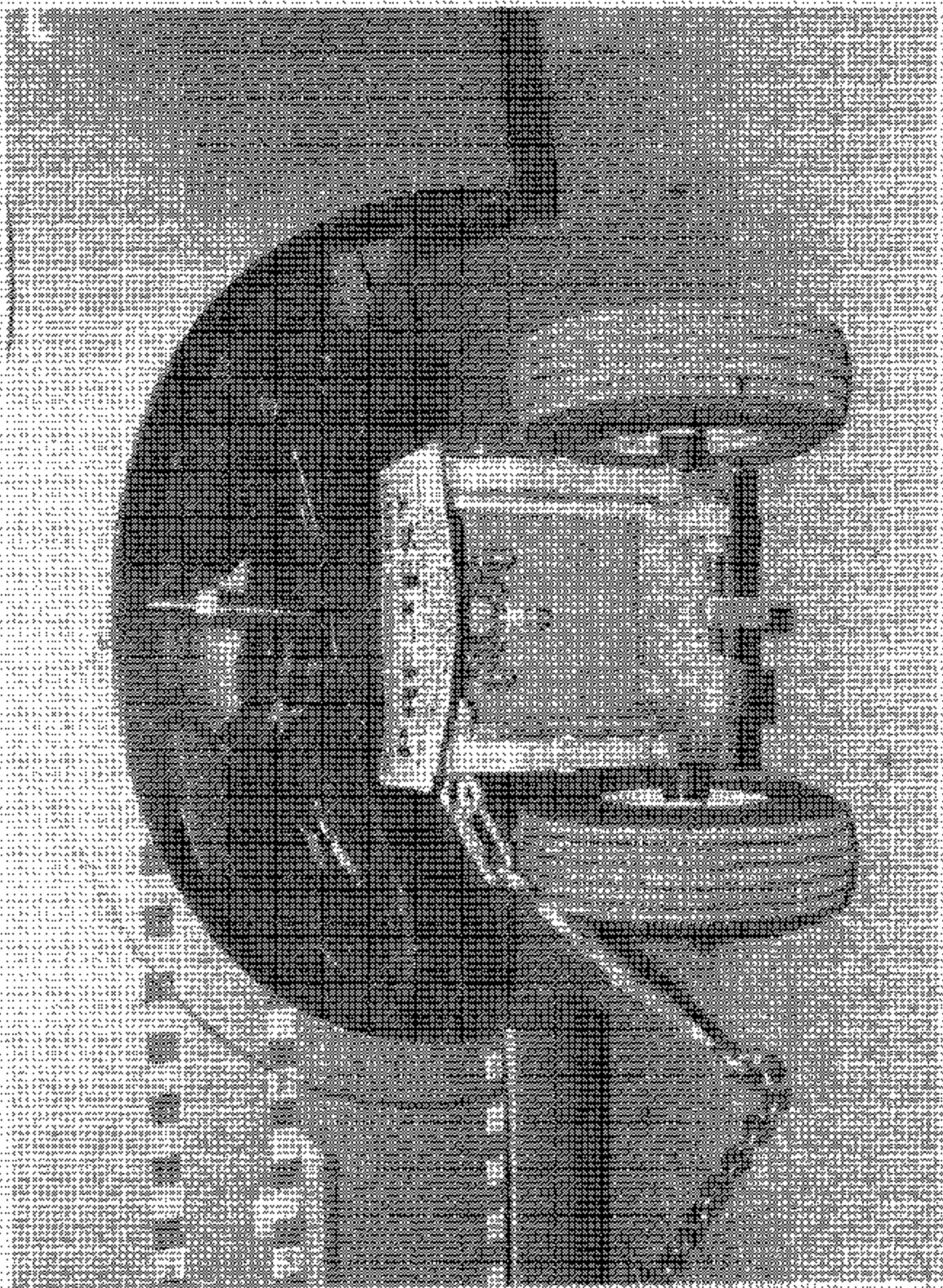
The Side Pole Impact



APR 1964



See Test Report from Wheel Data



Protest Letter to Wheel-Dolly

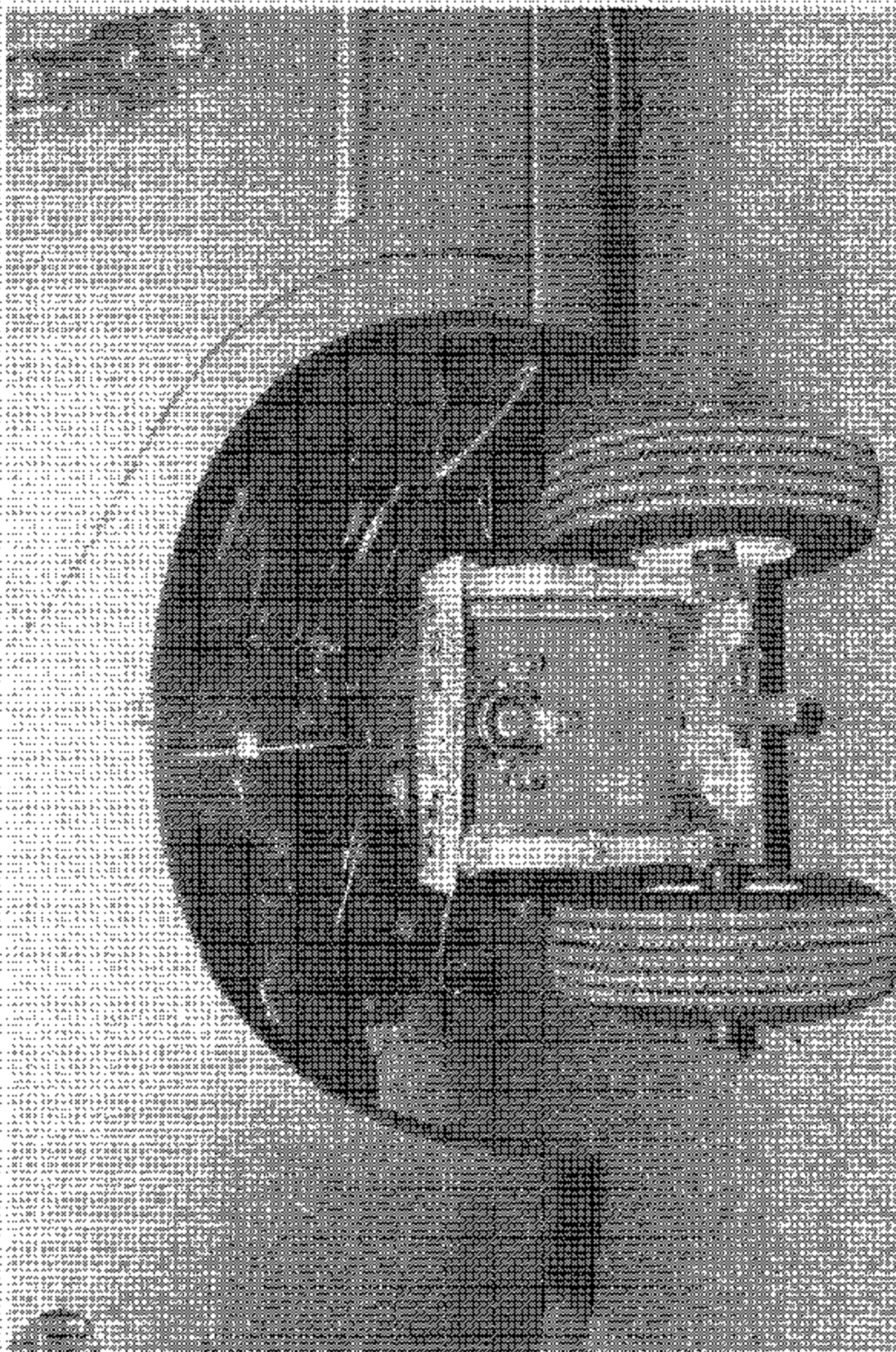
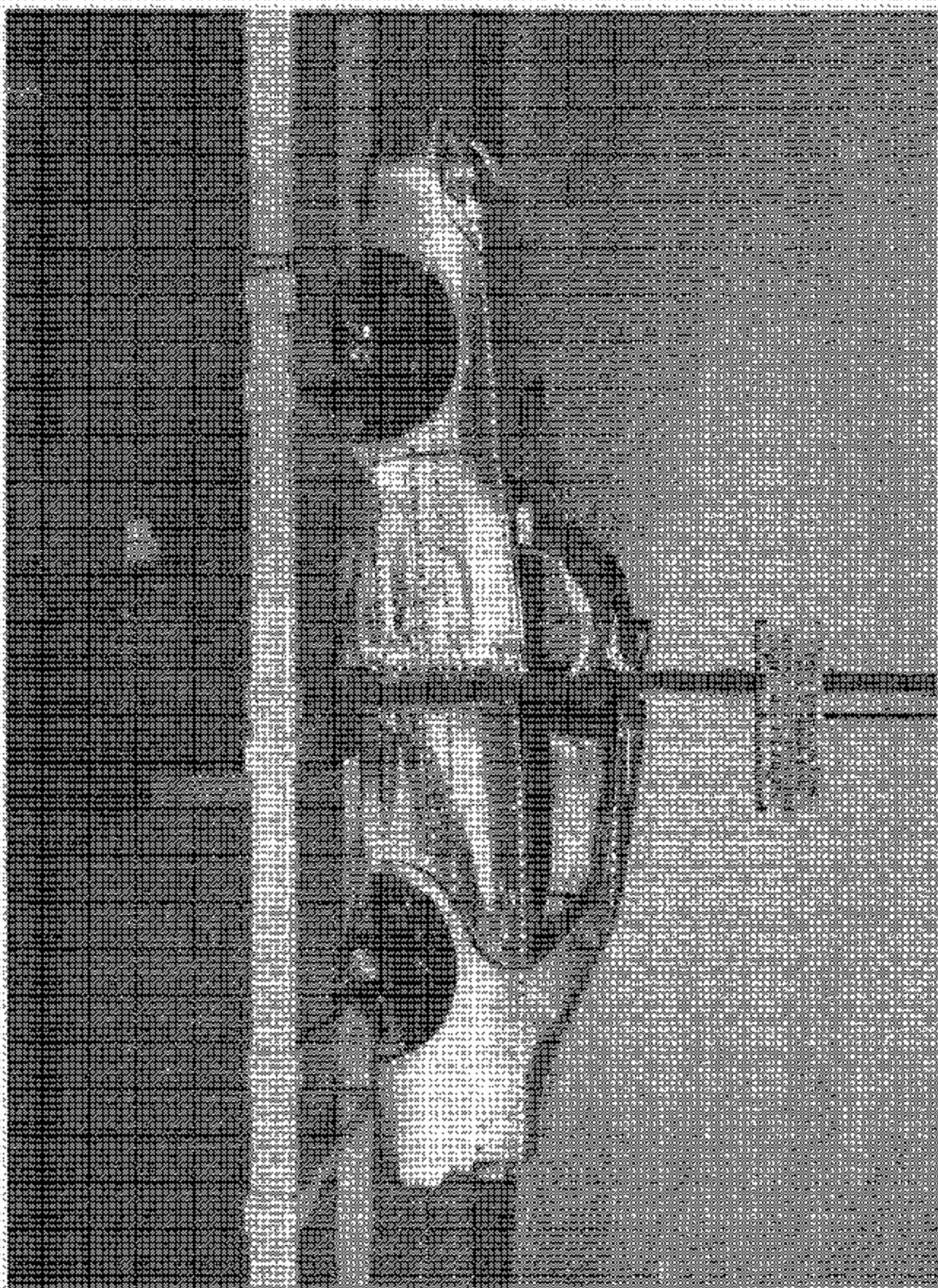
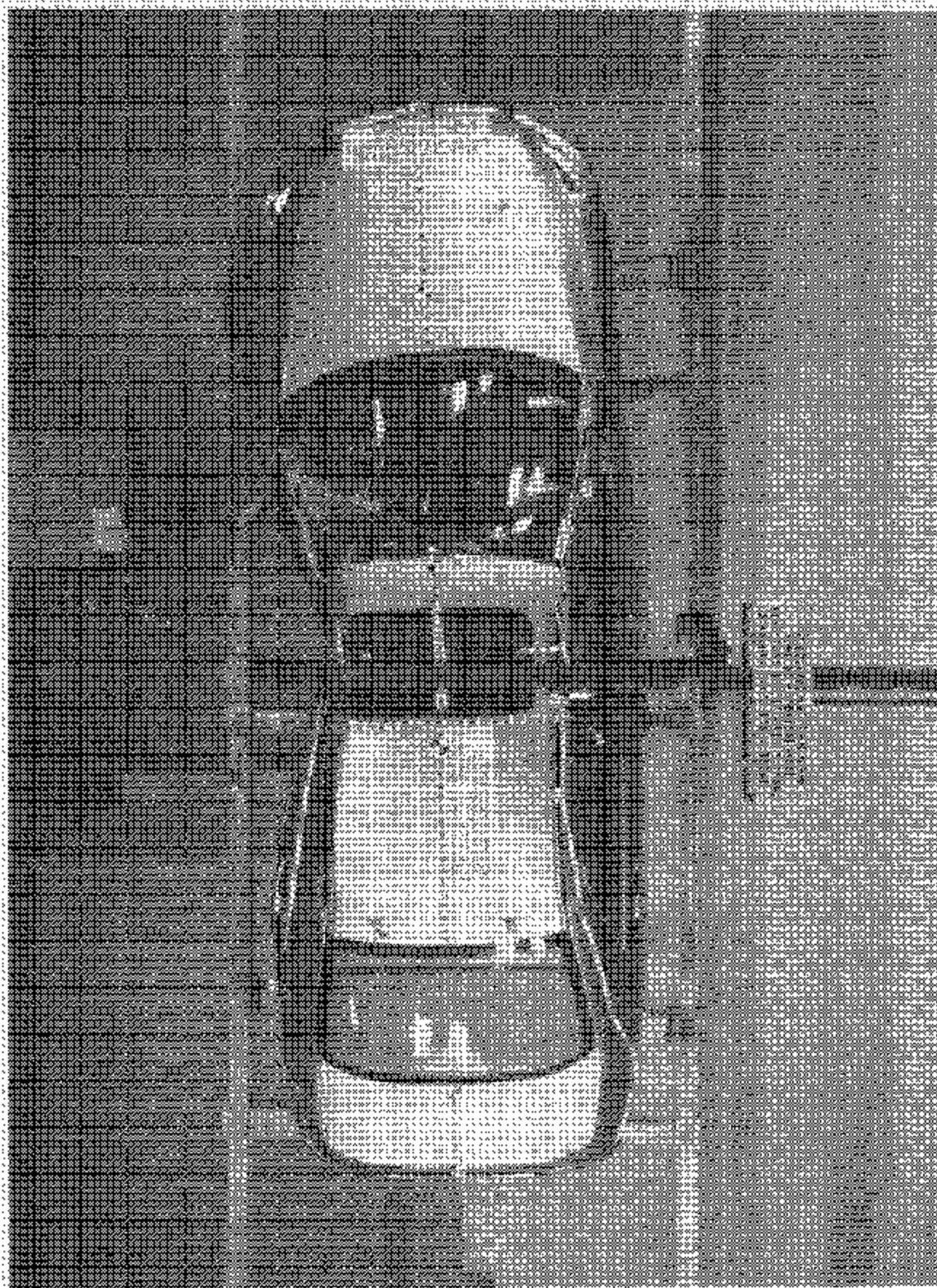


Photo from floor level only

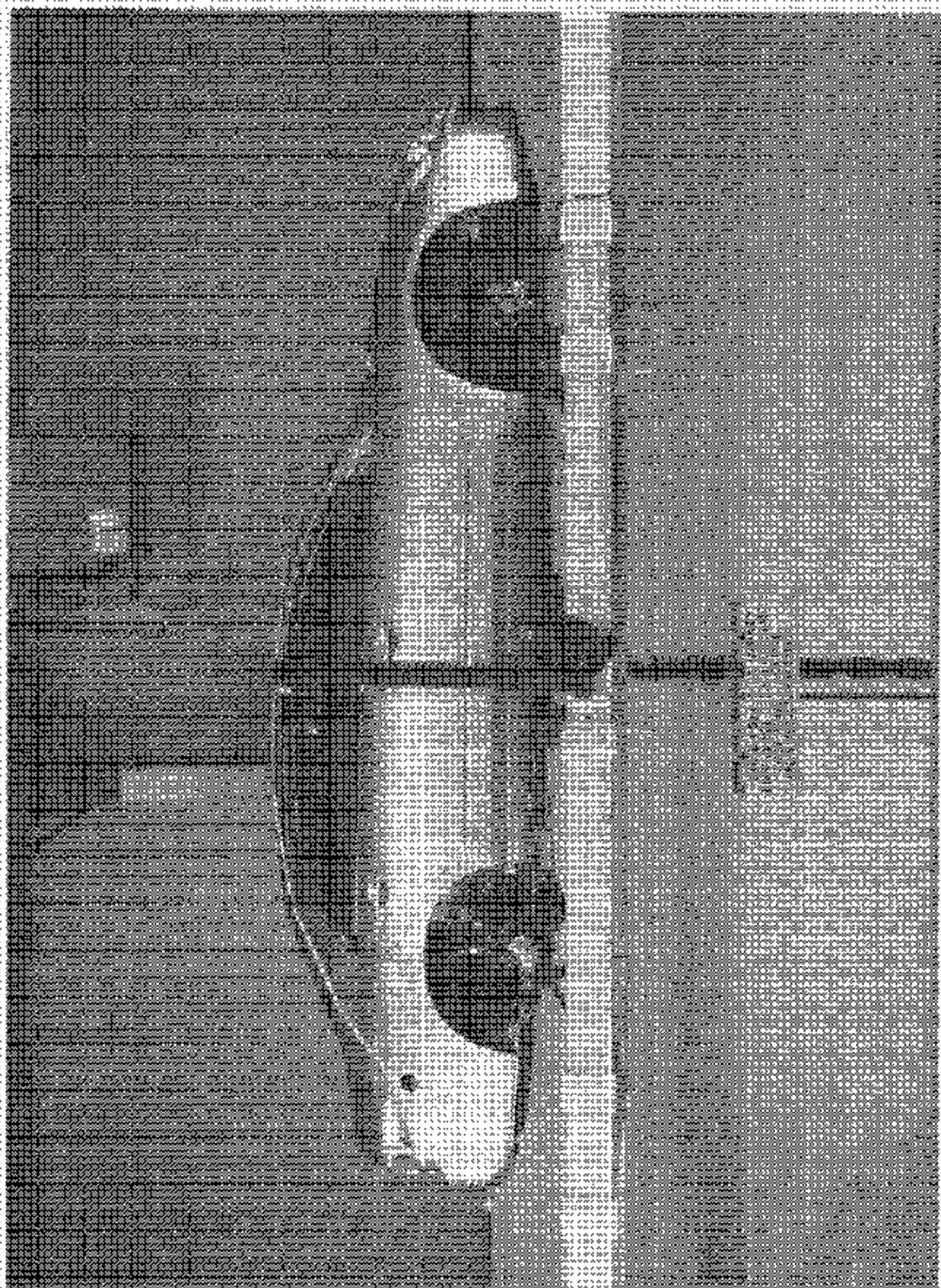


Figure 10 Degrees





Scatter 270 Degrees



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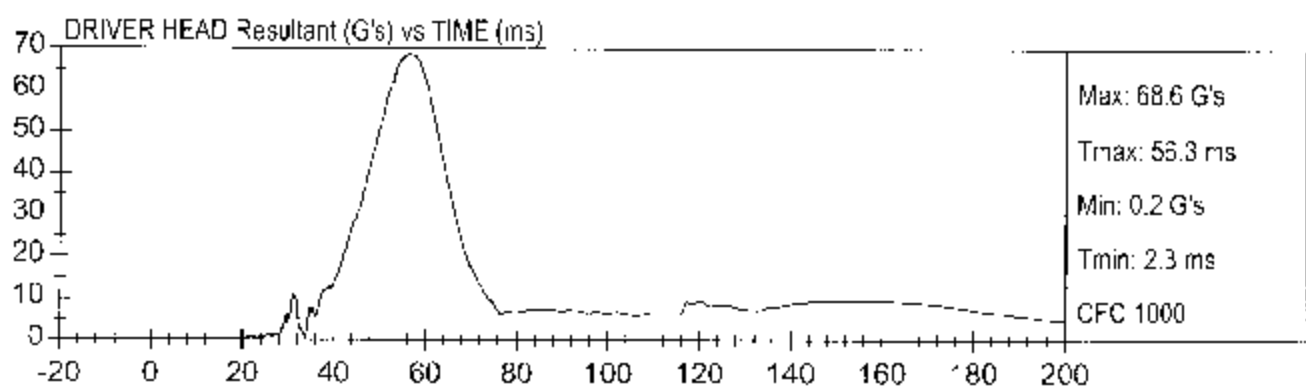
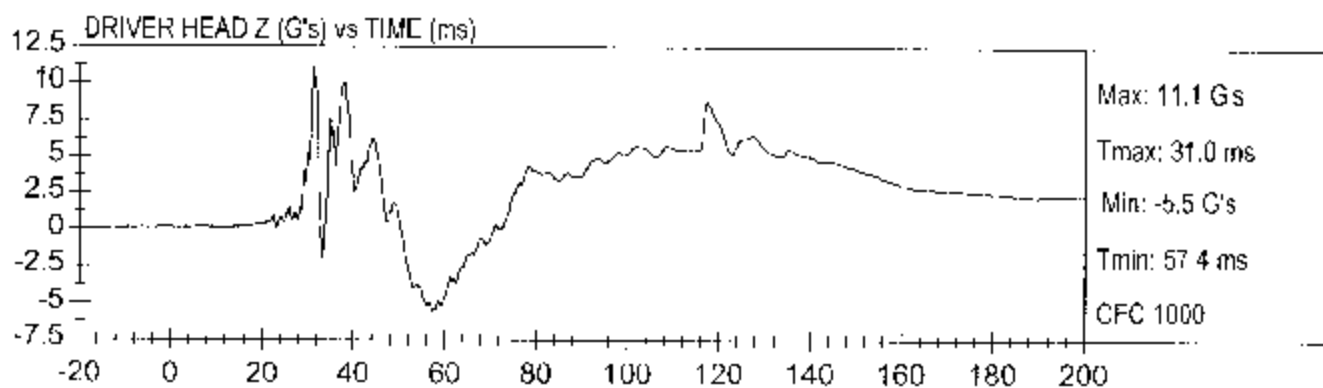
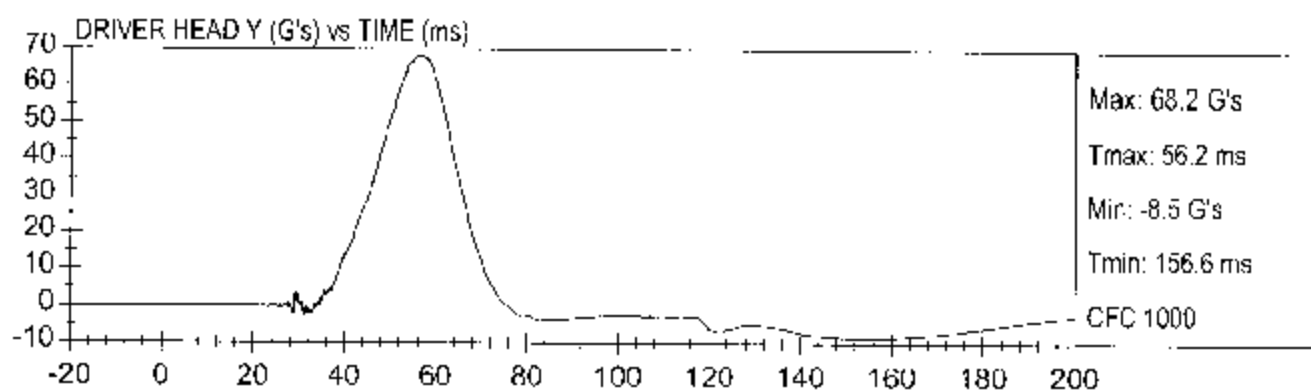
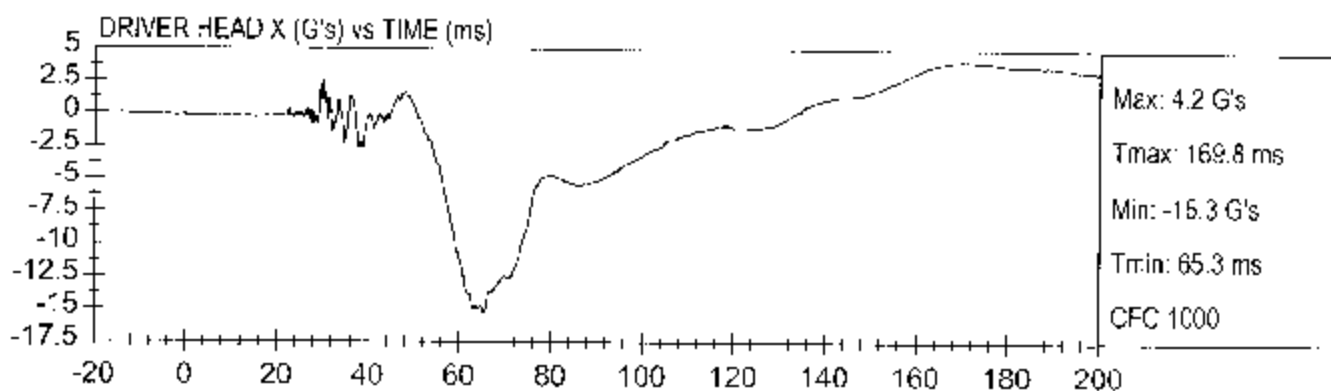
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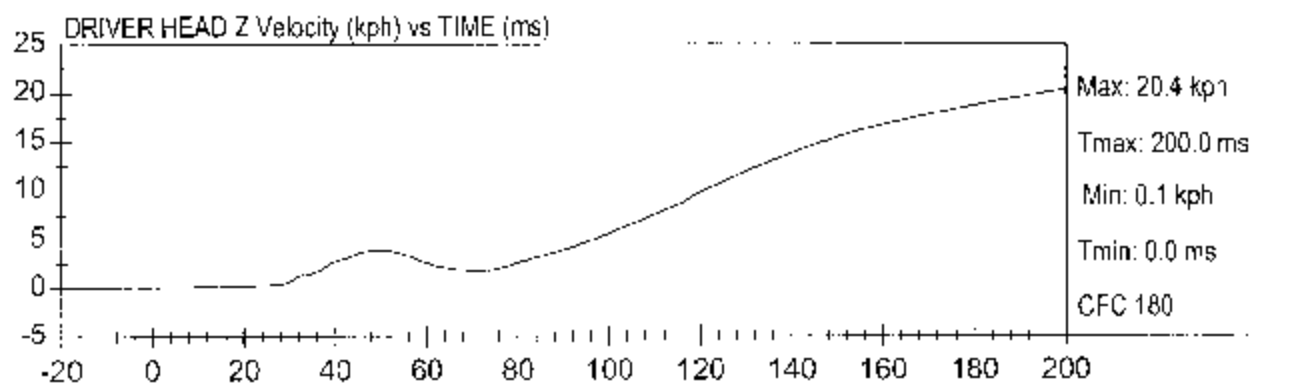
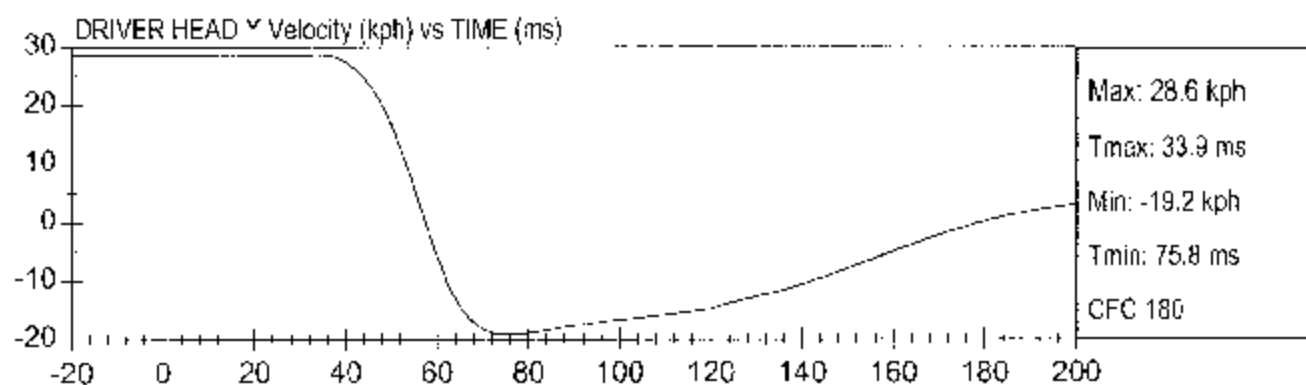
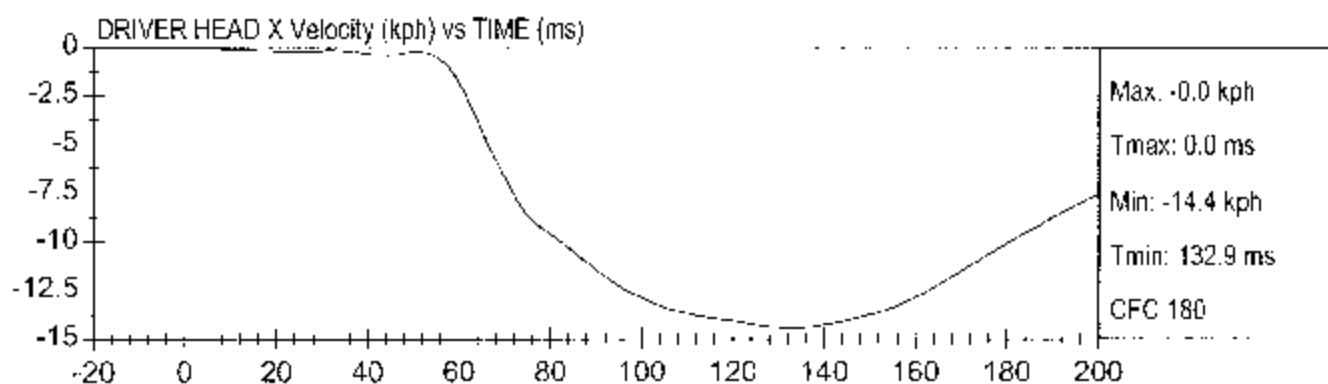
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**mga**FMVSS 201P
2003 HONDA ACCORD (C35301)Test Date: 3/24/2003
Speed: 17.8 mph (28.6 km/h)



FMVSS 201P
2003 HONDA ACCORD (C35301)

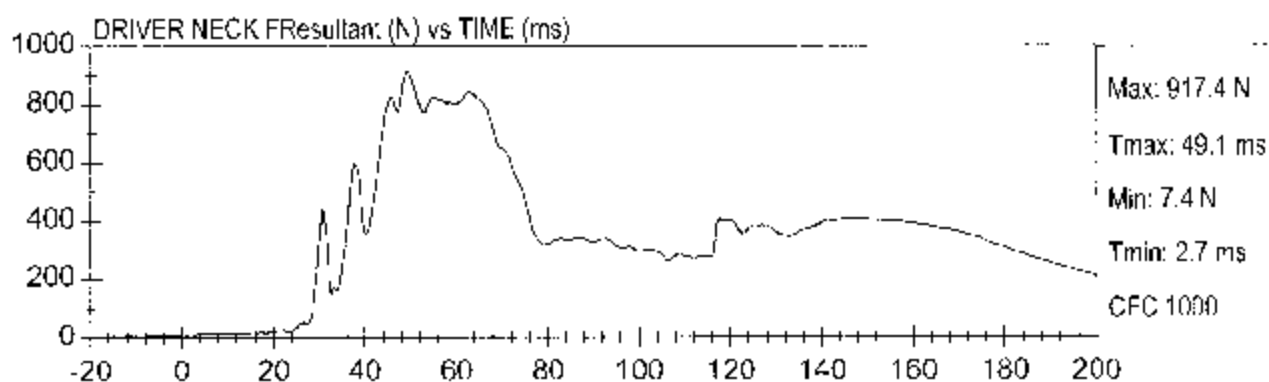
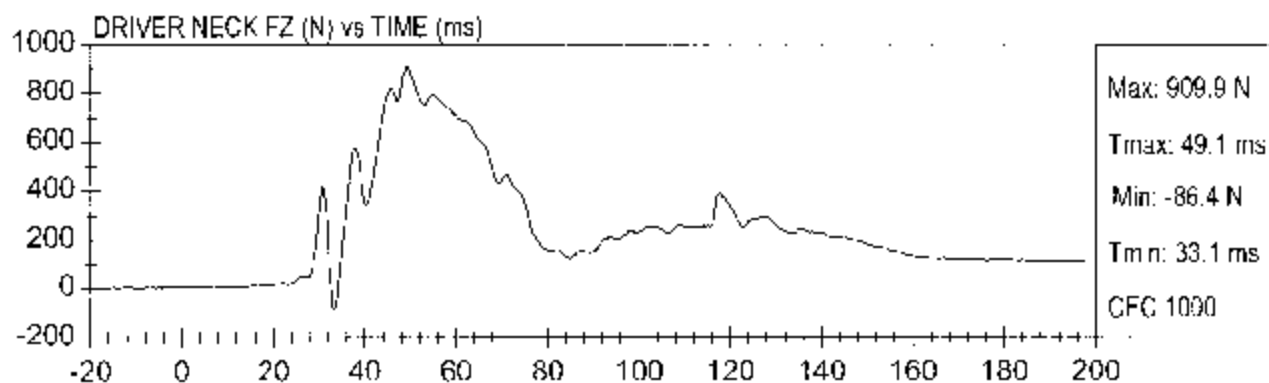
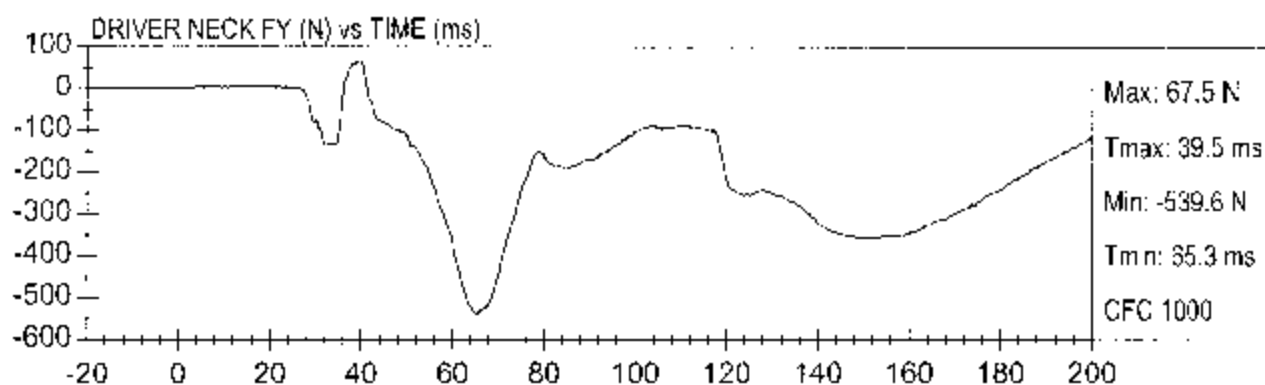
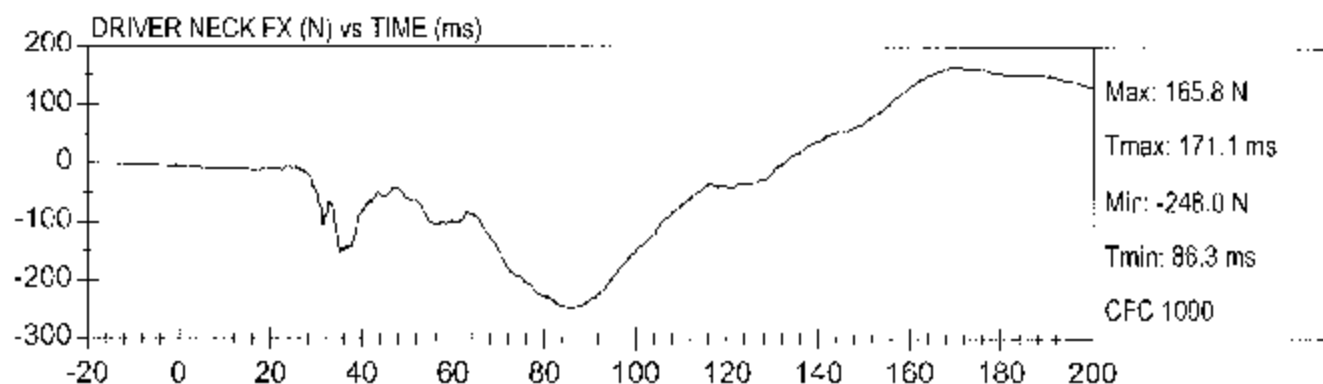
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FMVSS 201P
2003 HONDA ACCORD (C35301)

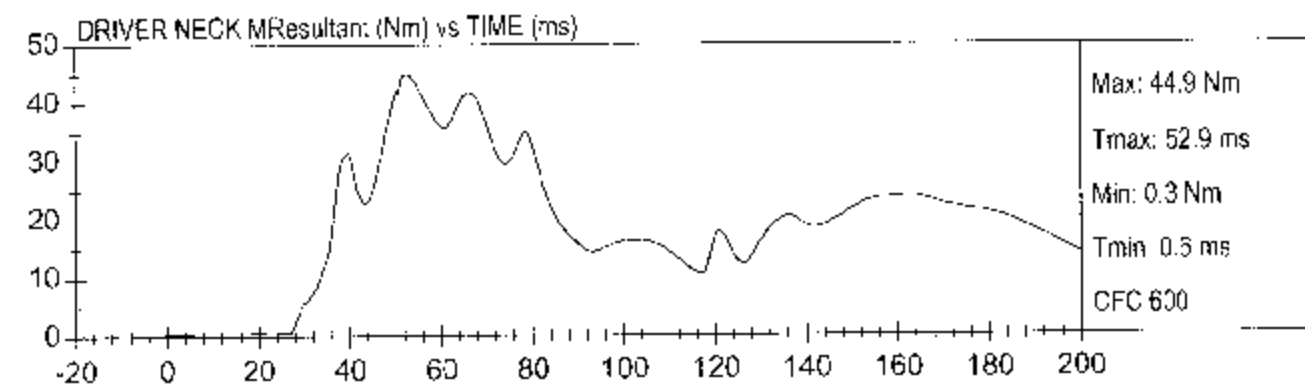
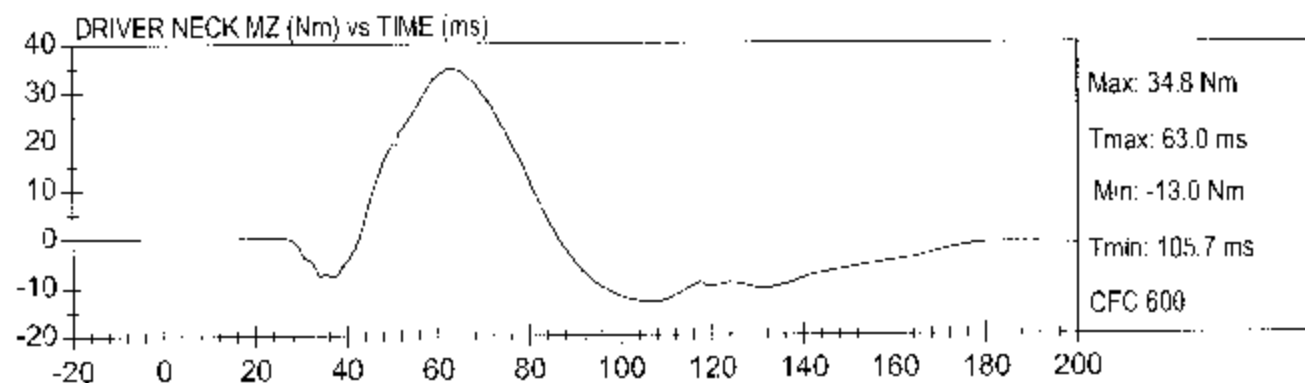
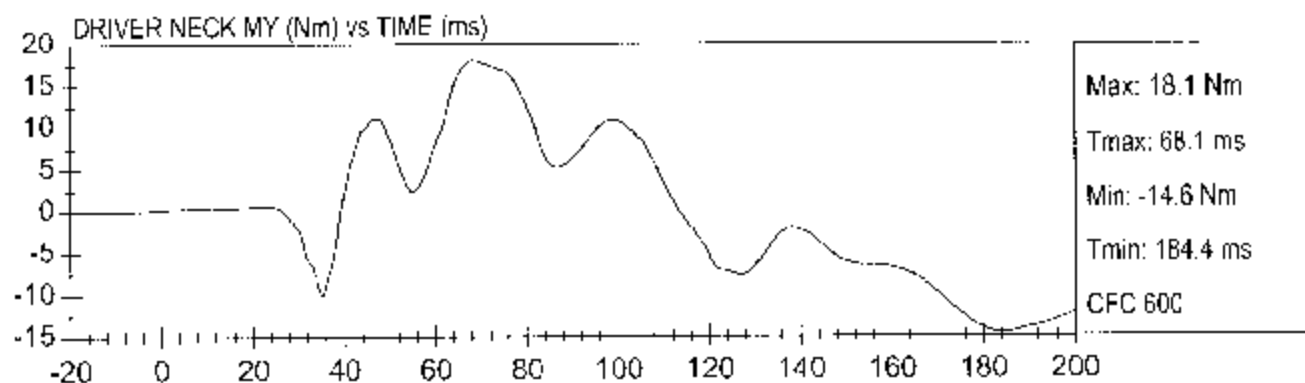
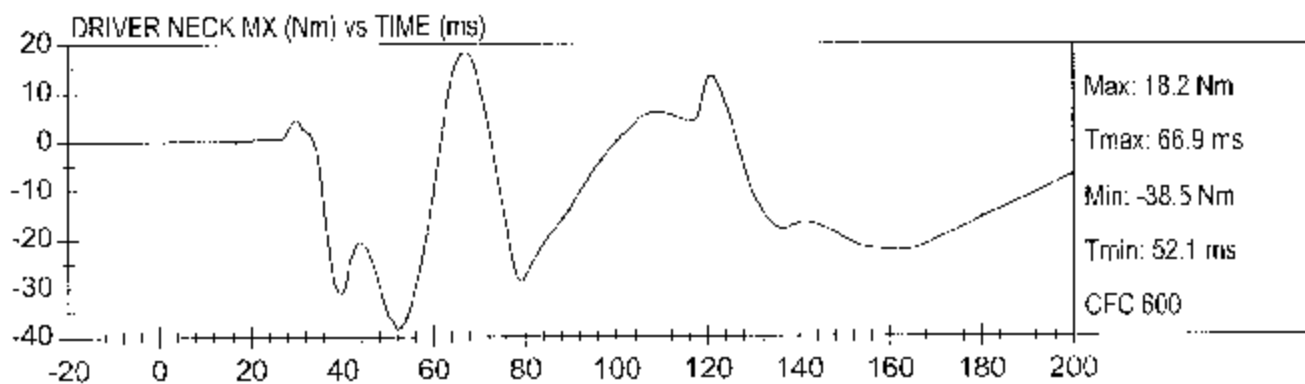
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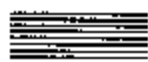




FMVSS 201P
2003 HONDA ACCORD (C35301)

Test Date: 3/24/2003
Speed: 17.8 mph (28.6 km/h)



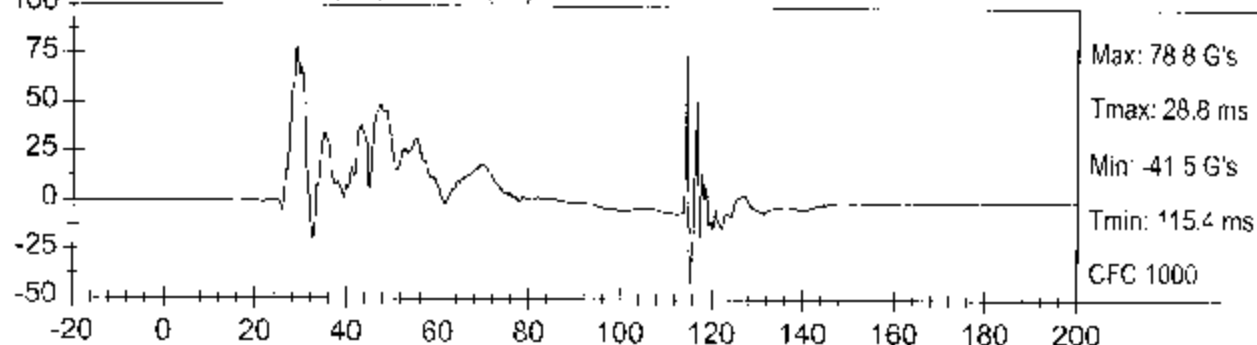


mga

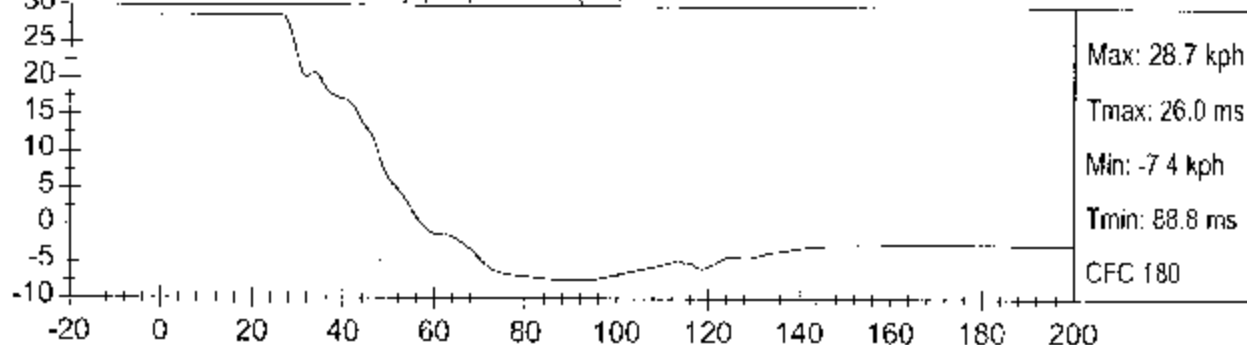
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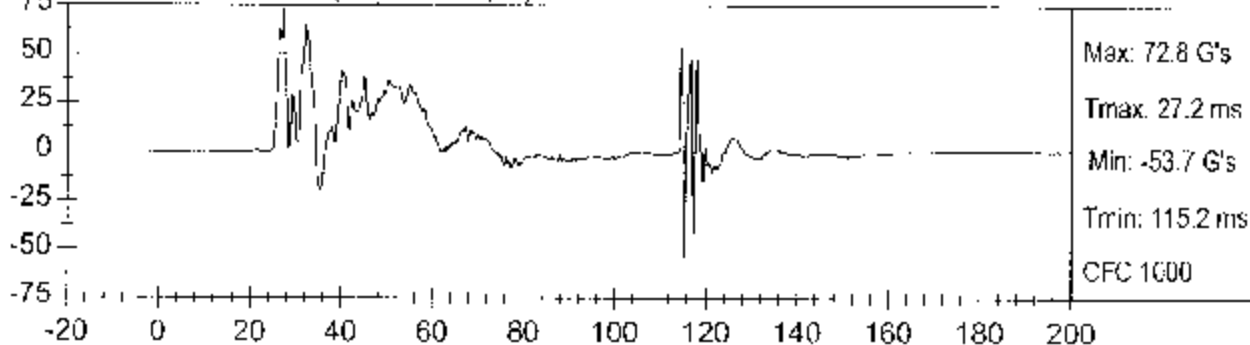
DRIVER UPPER RIB Y (G's) vs TIME (ms)



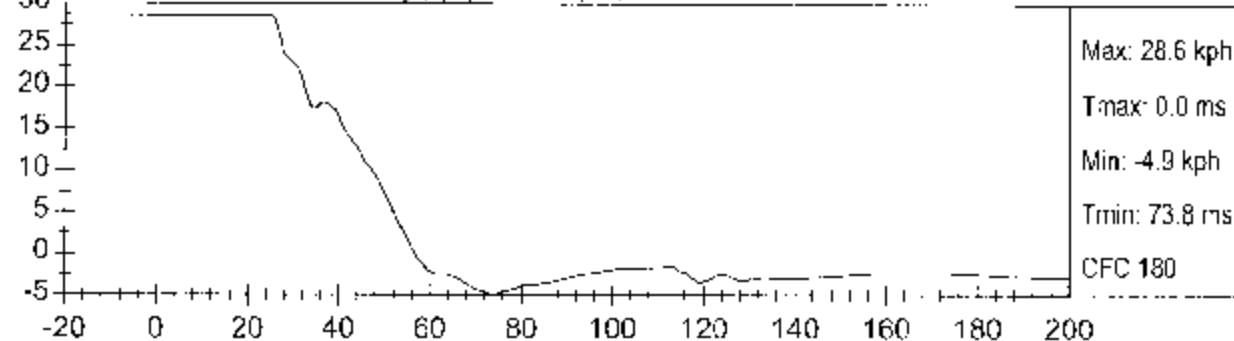
DRIVER UPPER RIB Y Velocity (kph) vs TIME (ms)



DRIVER LOWER RIB Y (G's) vs TIME (ms)



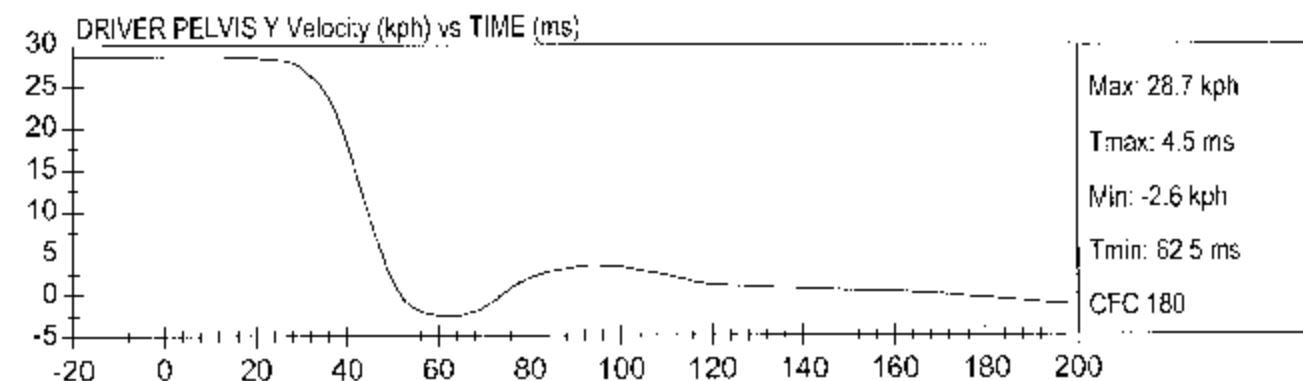
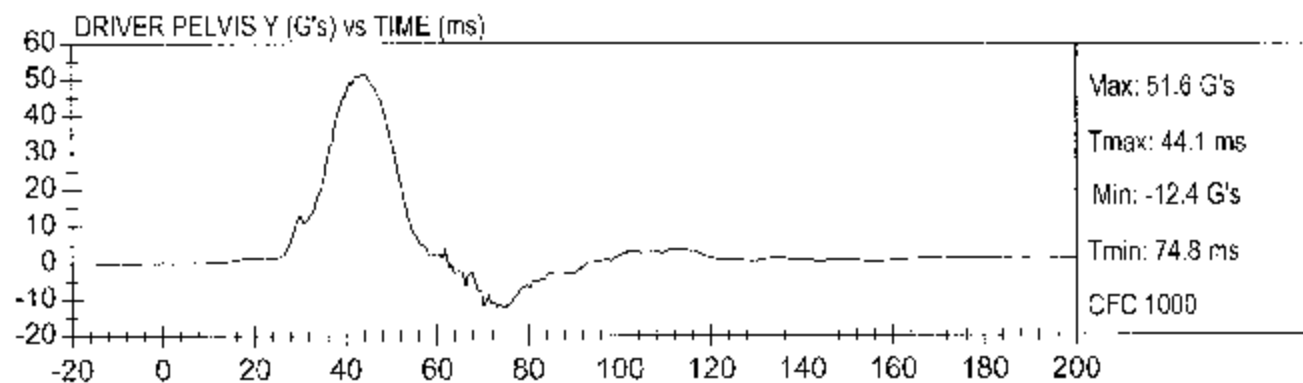
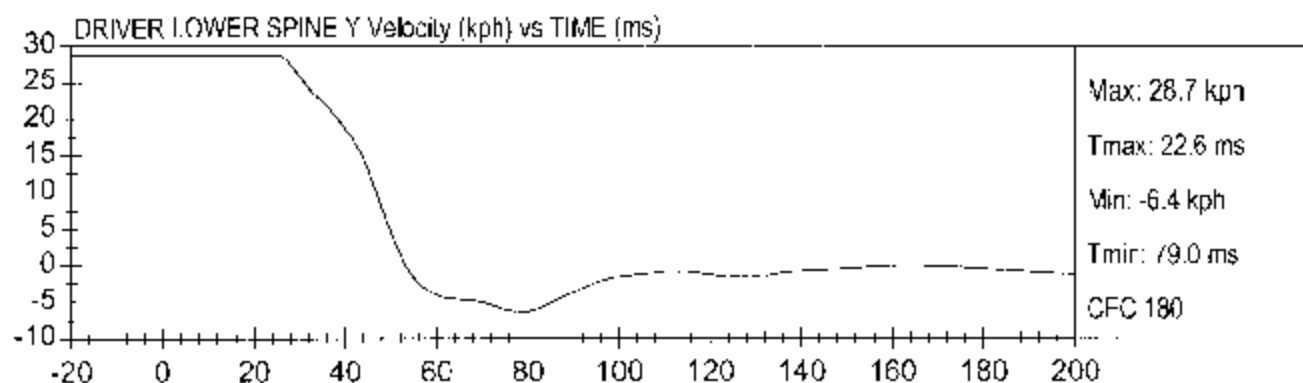
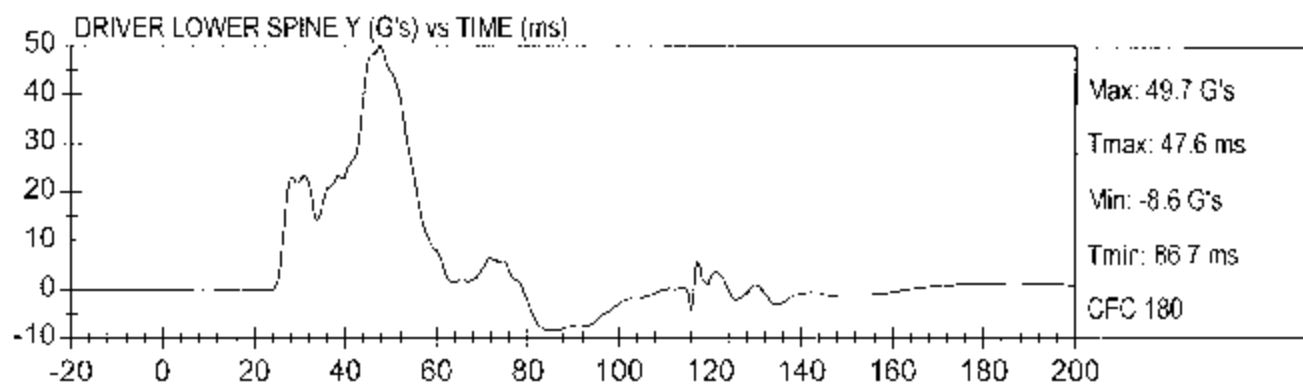
DRIVER LOWER RIB Y Velocity (kph) vs TIME (ms)





FMVSS 201P
2003 HONDA ACCORD (C35301)

Test Date: 3/24/2003
Speed: 17.3 mph (28.6 km/h)

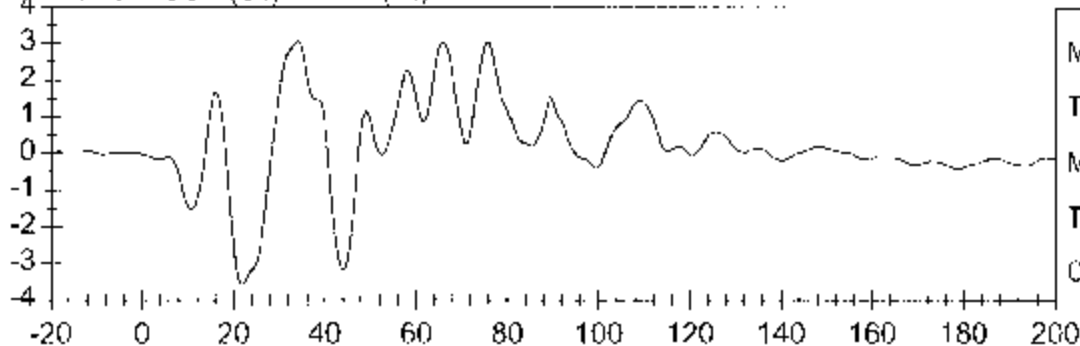




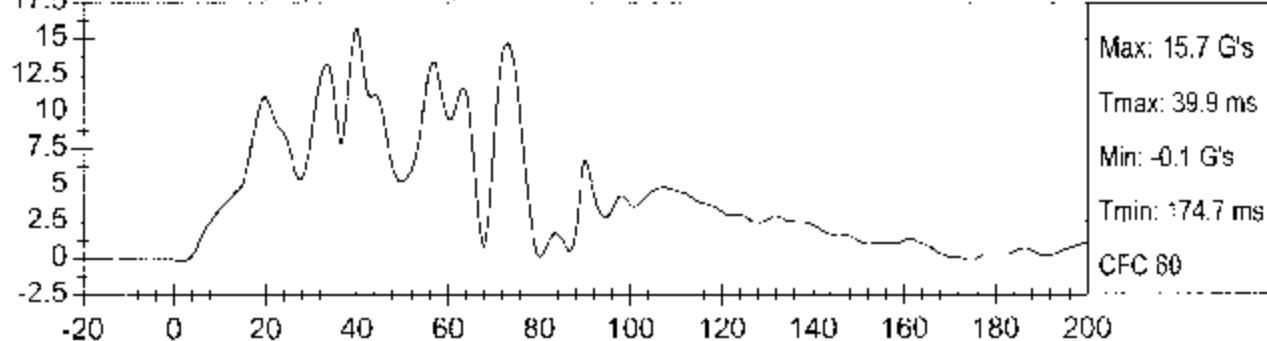
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2003 HONDA ACCORD (C35301)

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Speed: 17.8 mph (28.6 km/h)

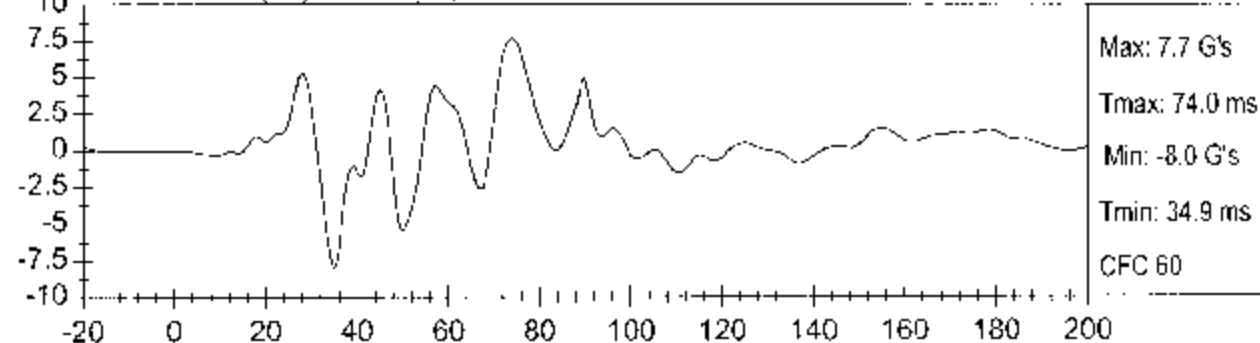
VEHICLE CG X (G's) vs TIME (ms)



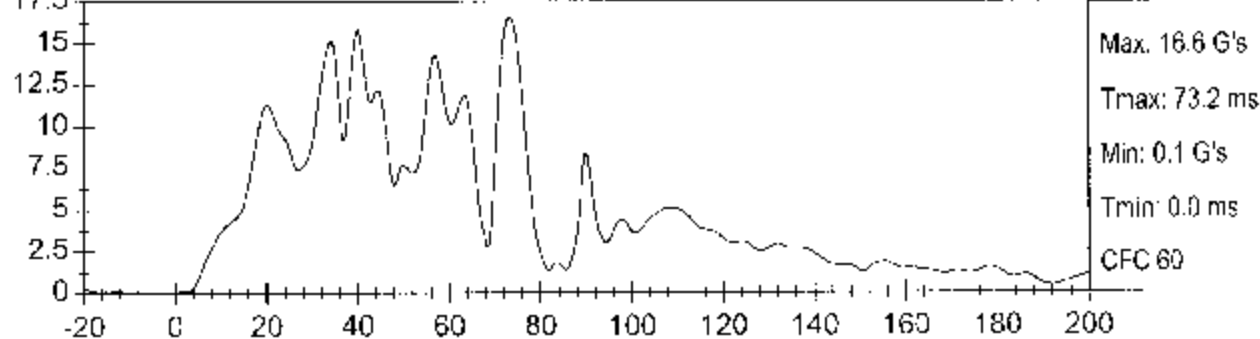
VEHICLE CG Y (G's) vs TIME (ms)



VEHICLE CG Z (G's) vs TIME (ms)



VEHICLE CG Resultant (G's) vs TIME (ms)

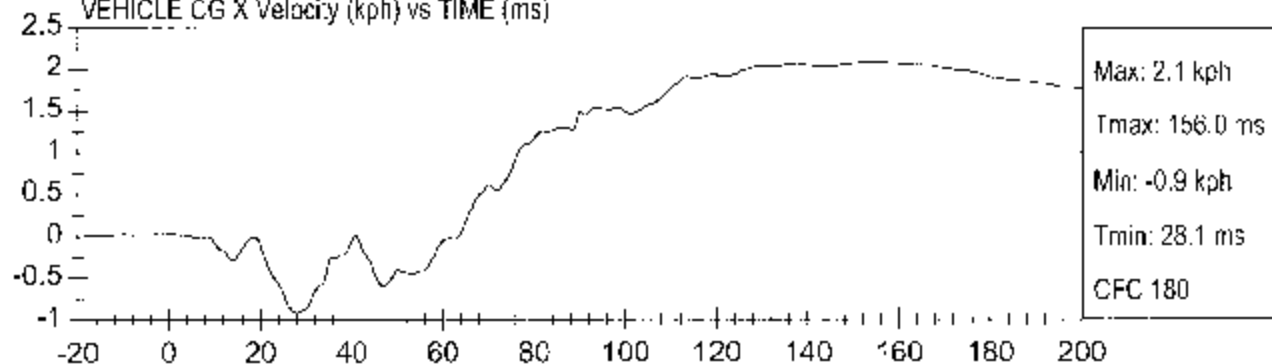




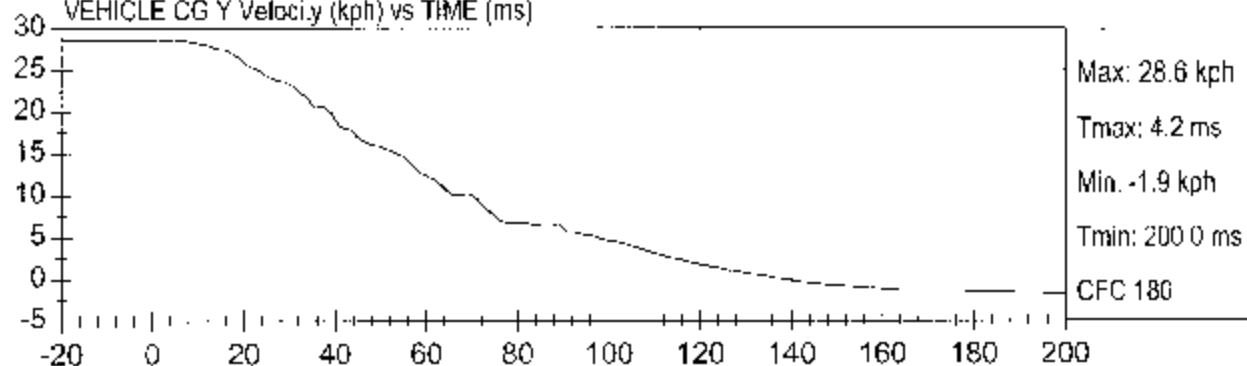
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2003 HONDA ACCORD (C35301)

Test Date: 3/24/2003
Speed: 17.8 mph (28.6 km/h)

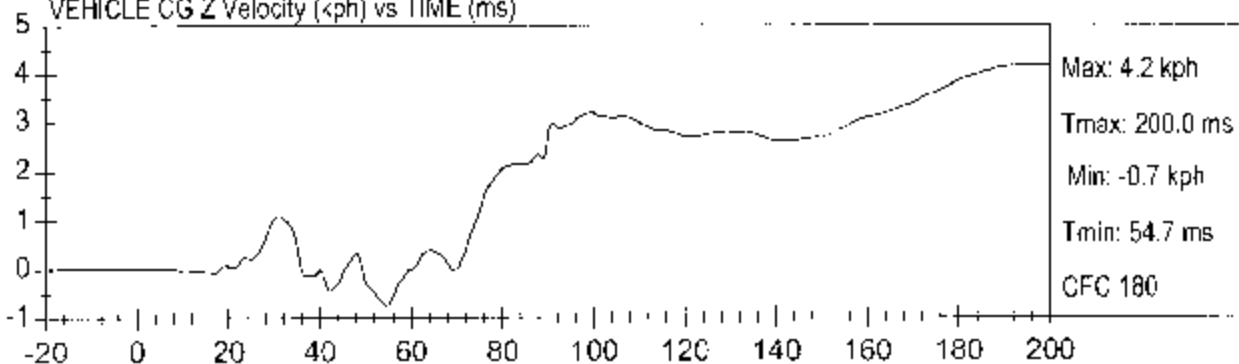
VEHICLE CG X Velocity (kph) vs TIME (ms)



VEHICLE CG Y Velocity (kph) vs TIME (ms)



VEHICLE CG Z Velocity (kph) vs TIME (ms)

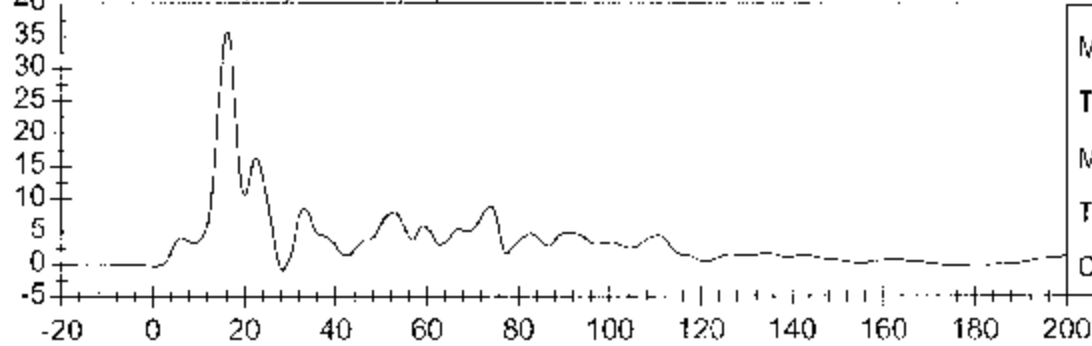




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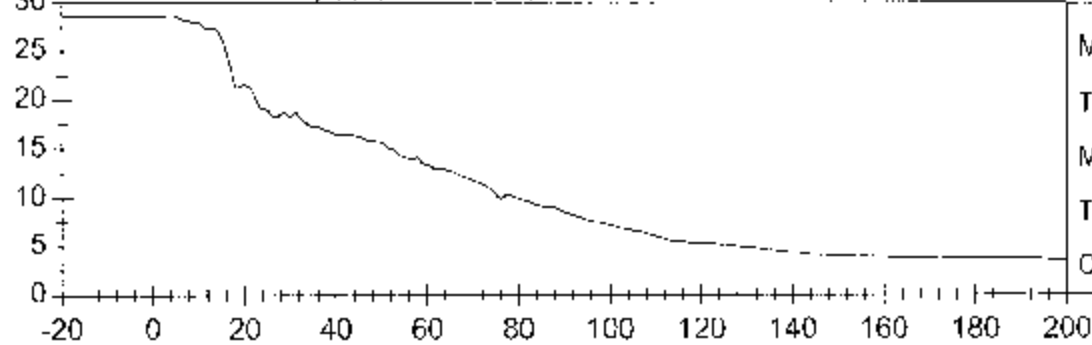
Test Date: 3/24/2003
Speed: 17.8 mph (28.6 km/h)

LEFT FLOOR Y (G's) vs TIME (ms)



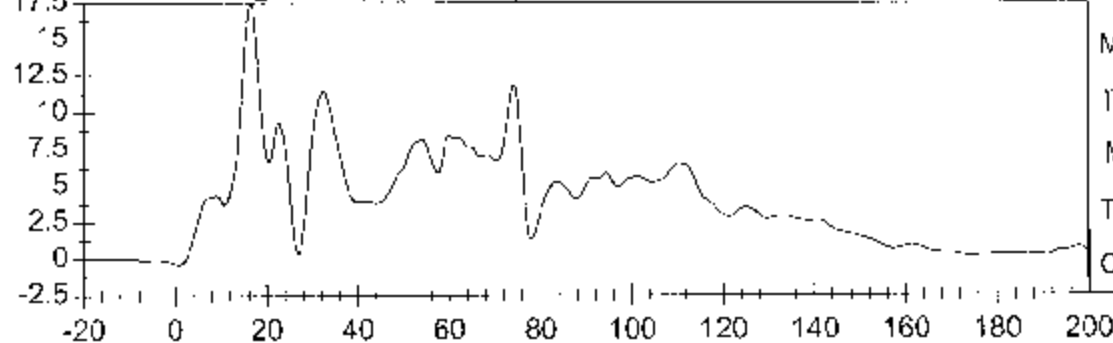
Max: 35.7 G's
Tmax: 16.1 ms
Min: -0.9 G's
Tmin: 28.3 ms
CFC 60

LEFT FLOOR Y Velocity (kph) vs TIME (ms)



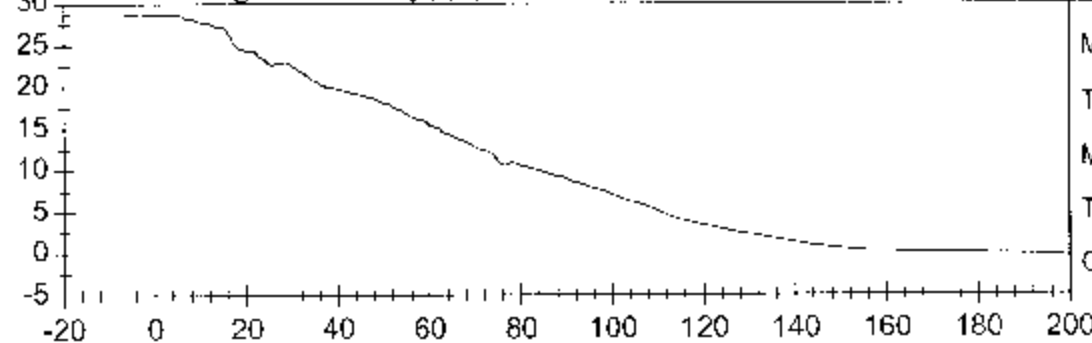
Max: 28.7 kph
Tmax: 4.0 ms
Min: 3.5 kph
Tmin: 200.0 ms
CFC 180

LEFT A-POST @ SILL Y (G's) vs TIME (ms)



Max: 17.5 G's
Tmax: 16.5 ms
Min: 0.3 G's
Tmin: 0.7 ms
CFC 60

LEFT A-POST @ SILL Y Velocity (kph) vs TIME (ms)

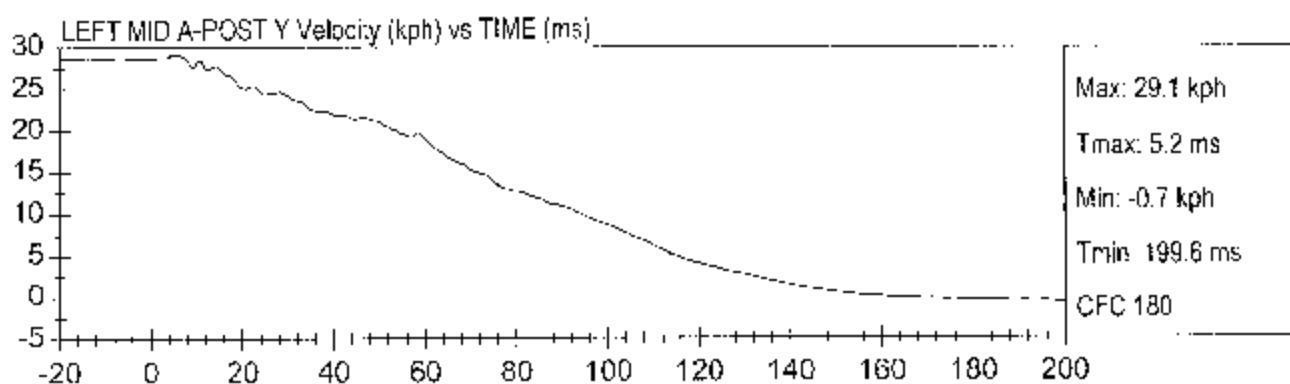
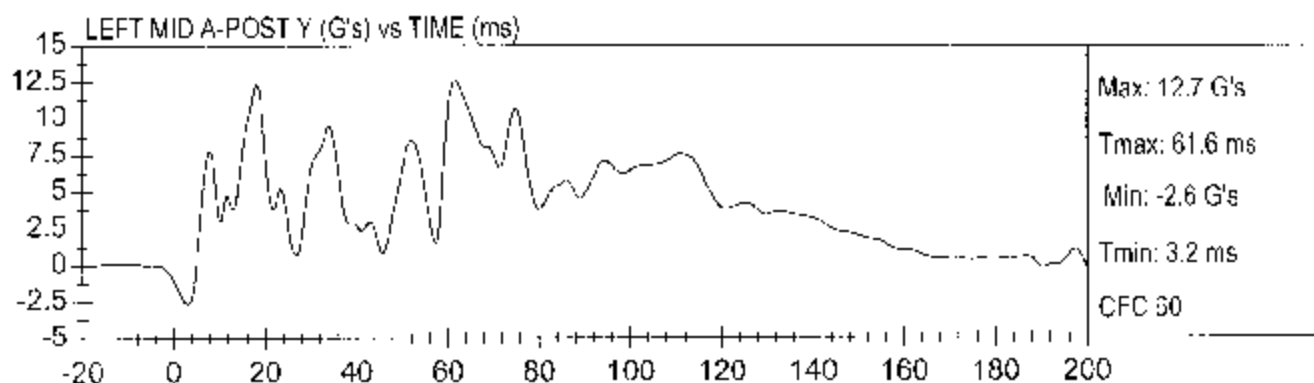
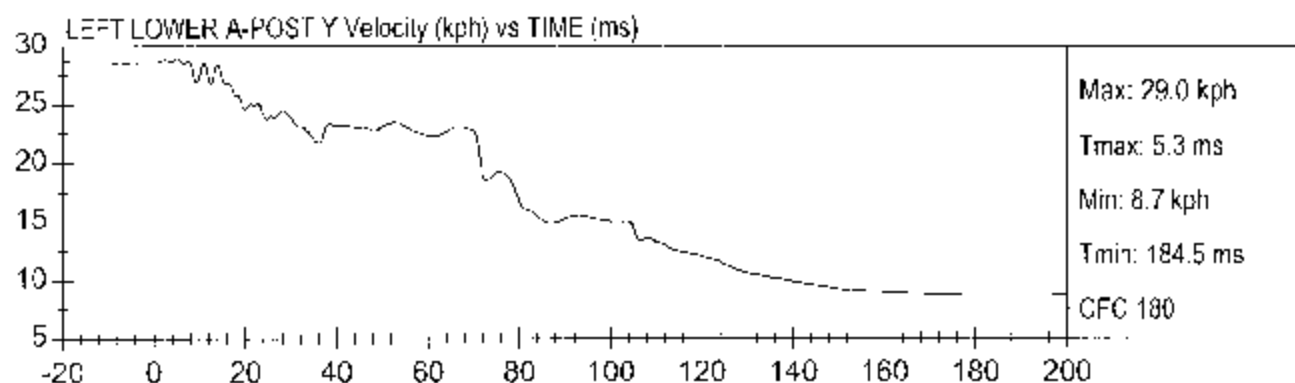
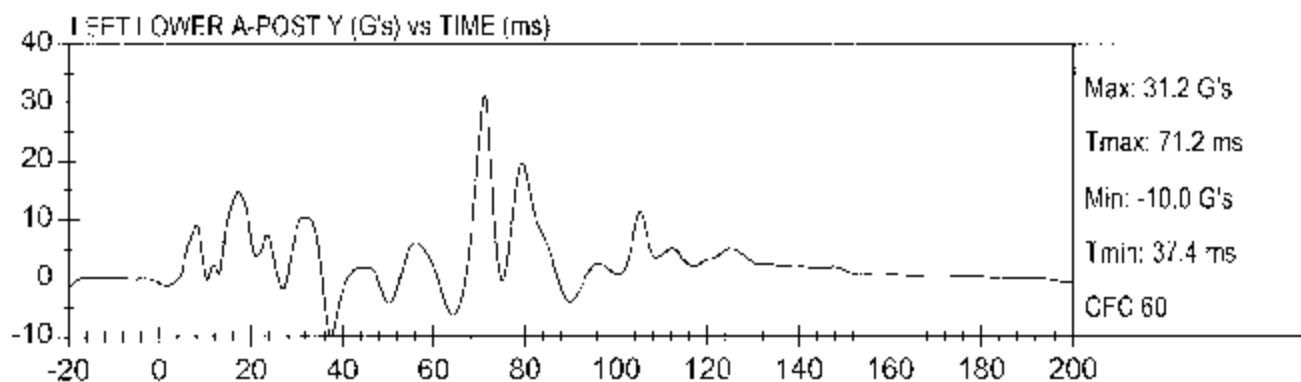


Max: 28.7 kph
Tmax: 3.2 ms
Min: -0.5 kph
Tmin: 200.0 ms
CFC 180



FMVSS 201P
2003 HONDA ACCORD (C35301)

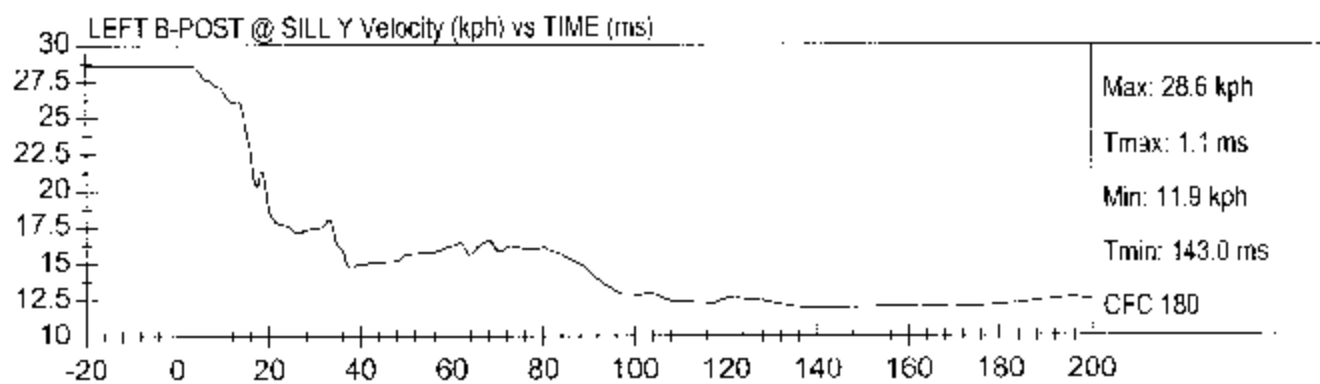
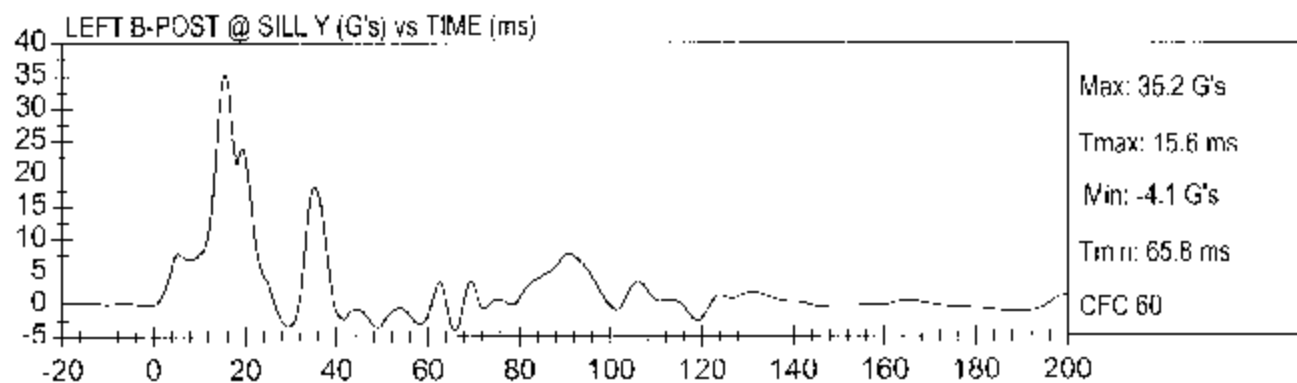
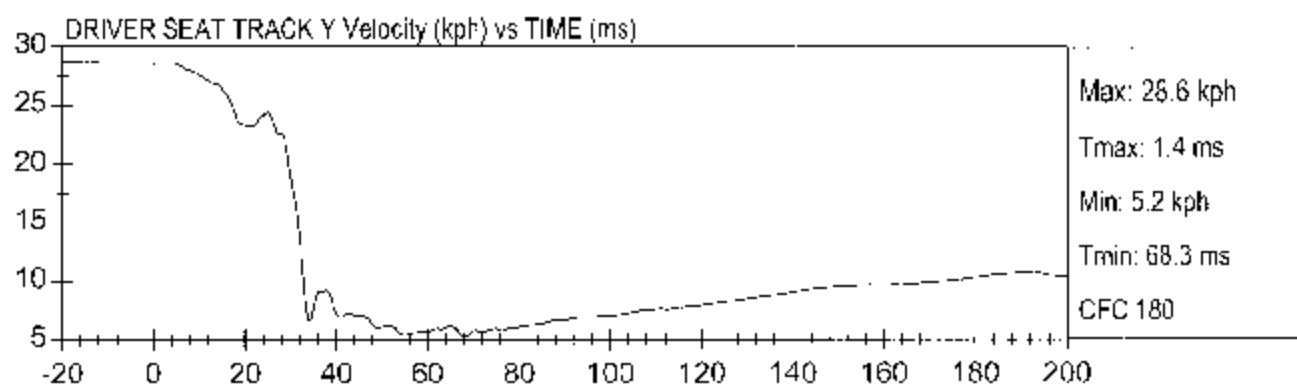
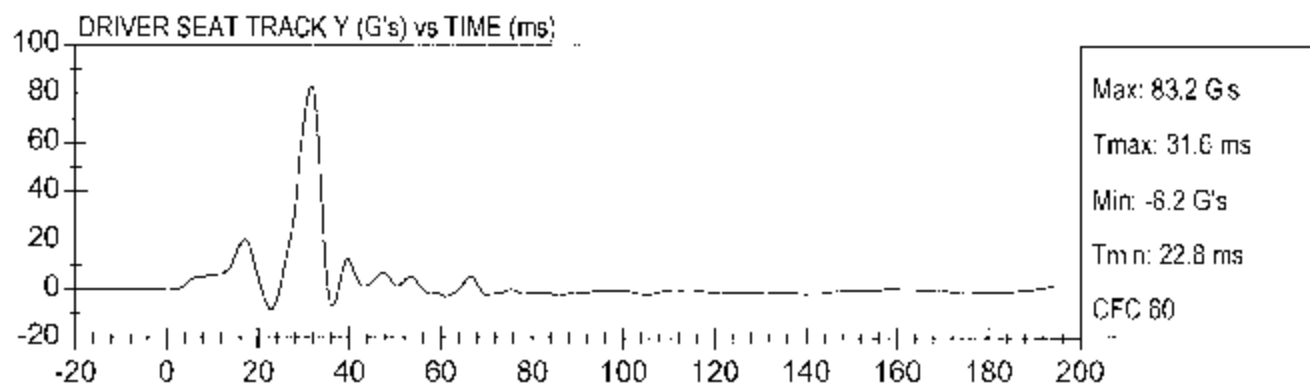
Test Date: 3/24/2003
Speed: 17.8 mph (28.6 km/h)





FMVSS 201P
2003 HONDA ACCORD (C35301)

Test Date 3/24/2003
Speed: 17.8 mph (28.5 km/h)

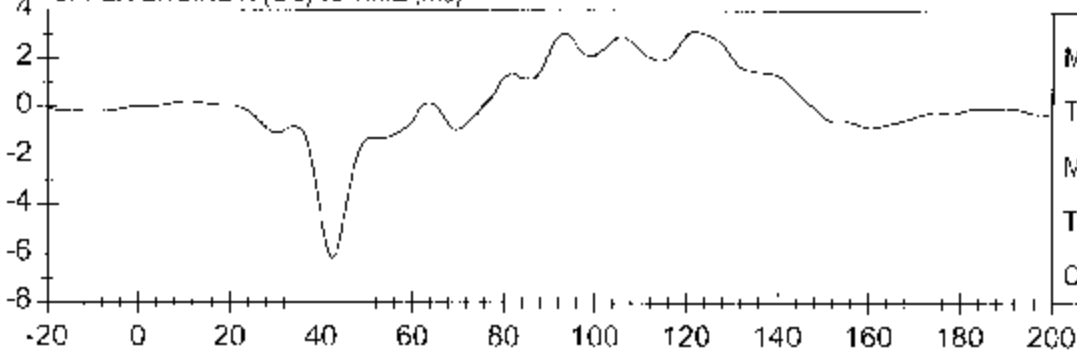




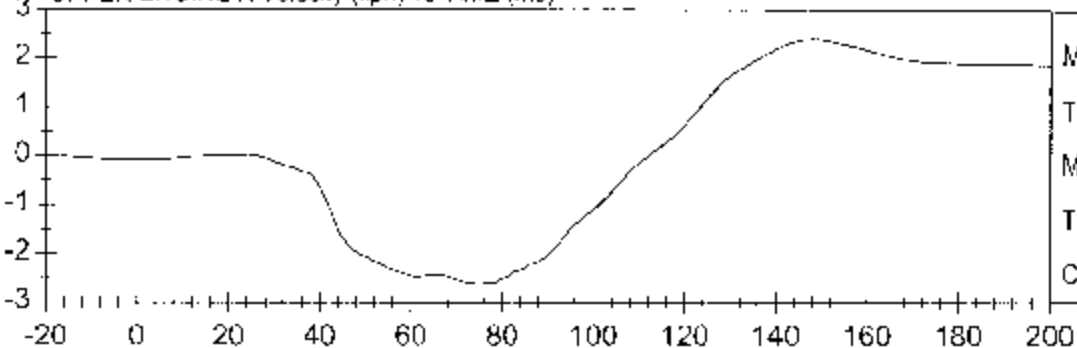
FMVSS 201P
2003 HONDA ACCORD (C35301)

Test Date: 3/24/2003
Speed: 17.8 mph (28.6 km/h)

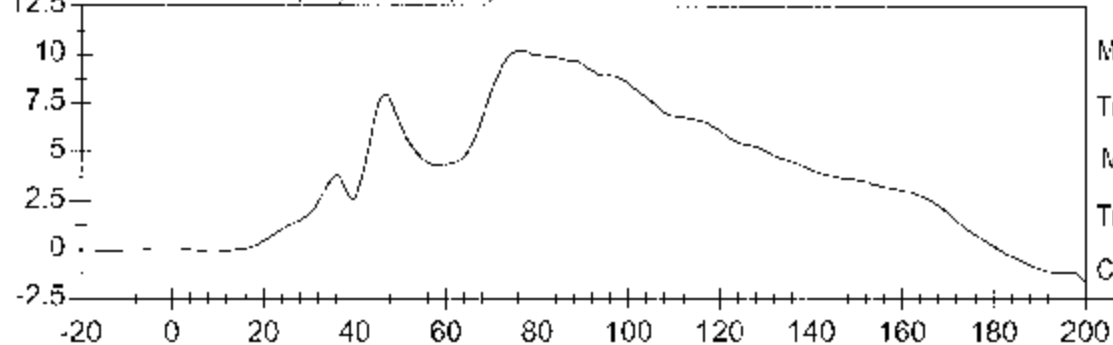
UPPER ENGINE X (G's) vs TIME (ms)



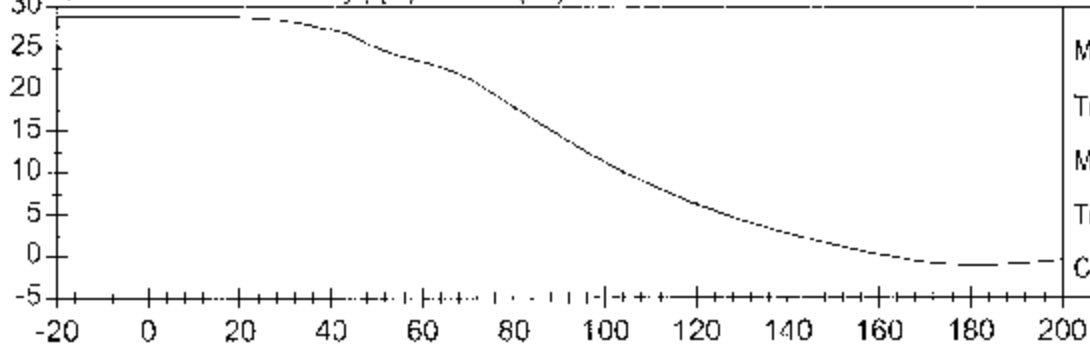
UPPER ENGINE X Velocity (kph) vs TIME (ms)



UPPER ENGINE Y (G's) vs TIME (ms)

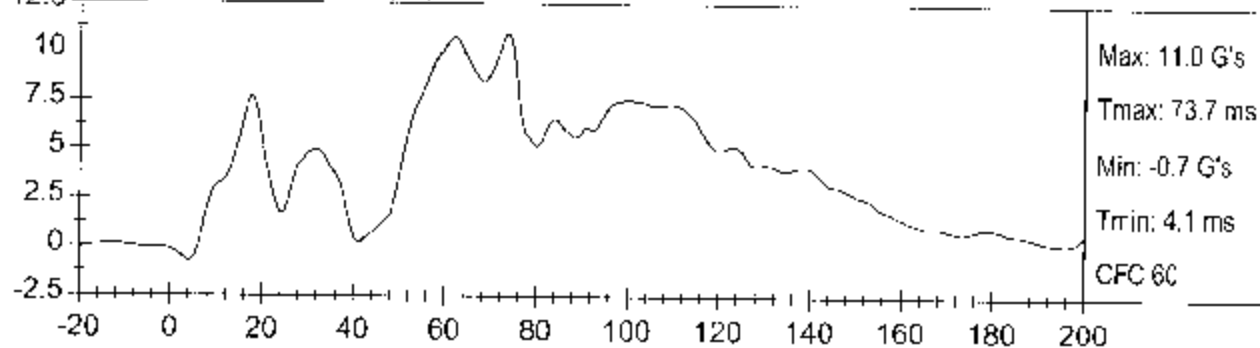


UPPER ENGINE Y Velocity (kph) vs TIME (ms)

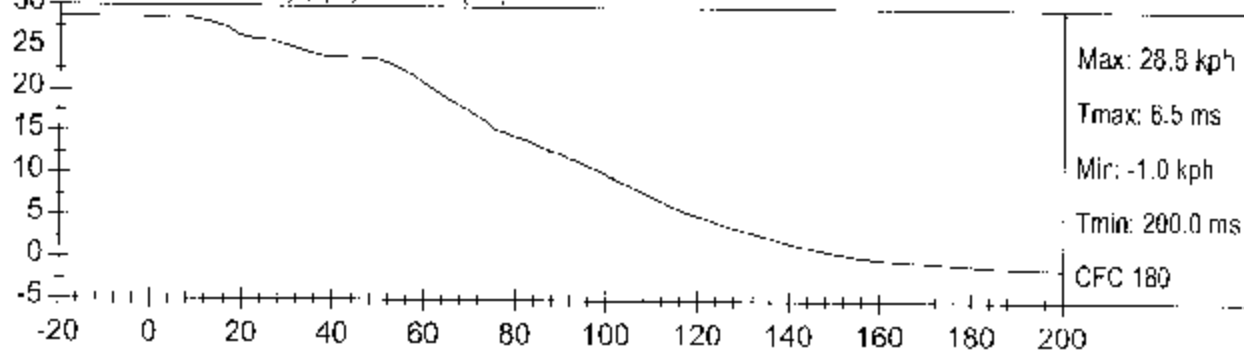


**mga**FMVSS 201P
2003 HONDA ACCORD (C35301)Test Date: 3/24/2003
Speed: 17.8 mph (28.6 km/h)

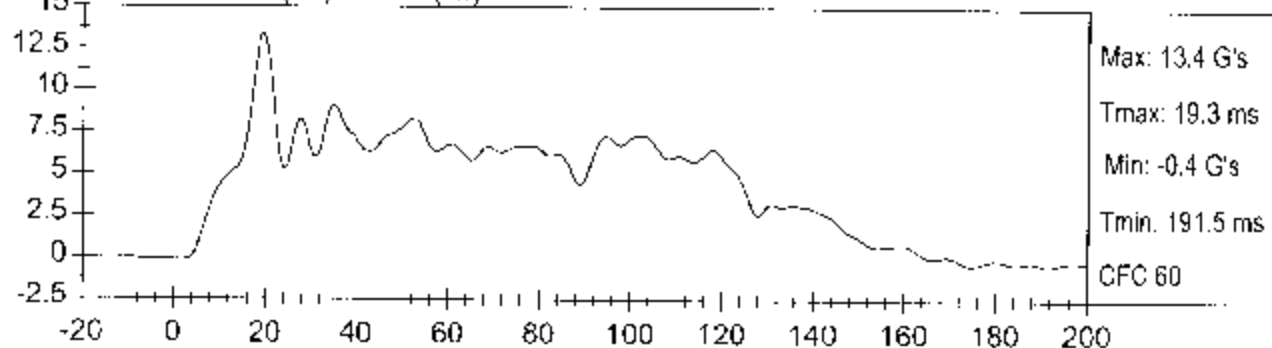
FIREWALL Y (G's) vs TIME (ms)



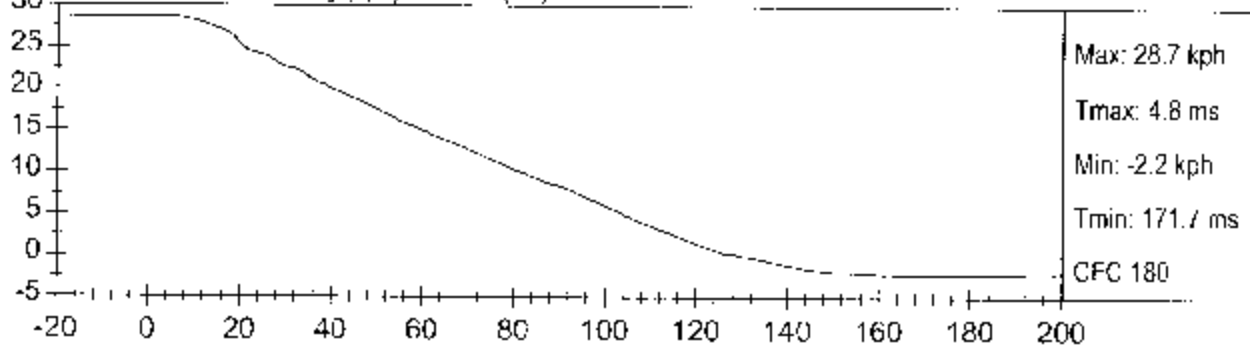
FIREWALL Y Velocity (kph) vs TIME (ms)



RIGHT FLOOR Y (G's) vs TIME (ms)



RIGHT FLOOR Y Velocity (kph) vs TIME (ms)

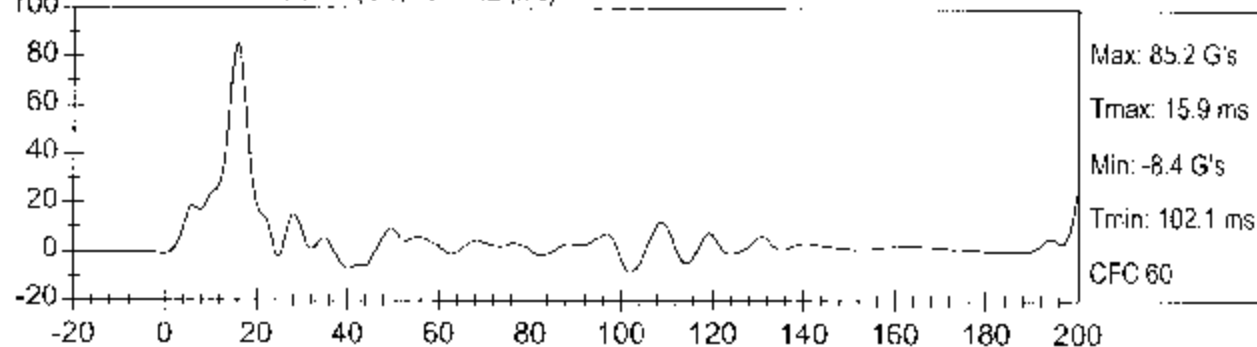




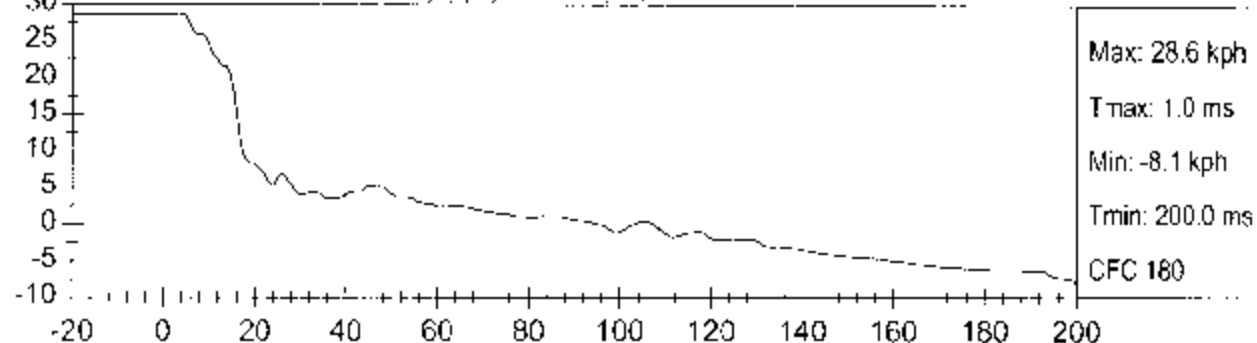
FMVSS 201P
2003 HONDA ACCORD (C35304)

Test Date: 3/24/2003
Speed: 17.8 mph (28.6 km/h)

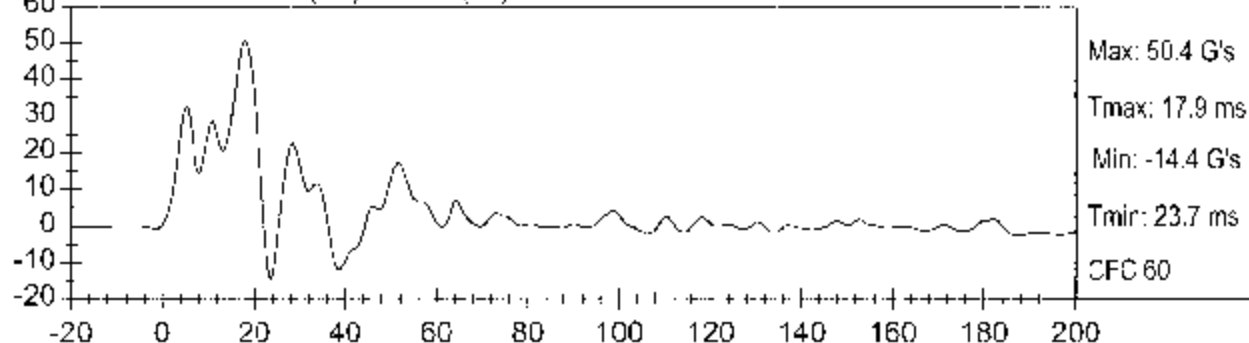
LEFT LOWER B-POST Y (G's) vs TIME (ms)



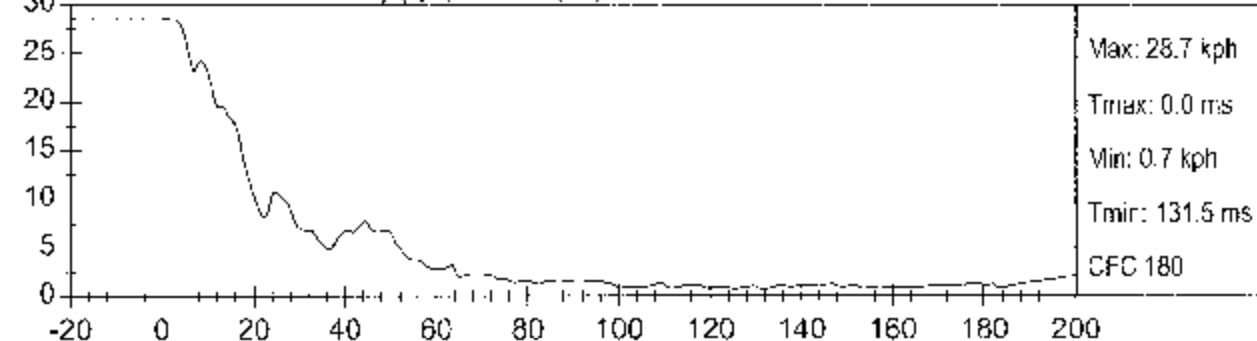
LEFT LOWER B-POST Y Velocity (kph) vs TIME (ms)



LEFT MID B-POST Y (G's) vs TIME (ms)

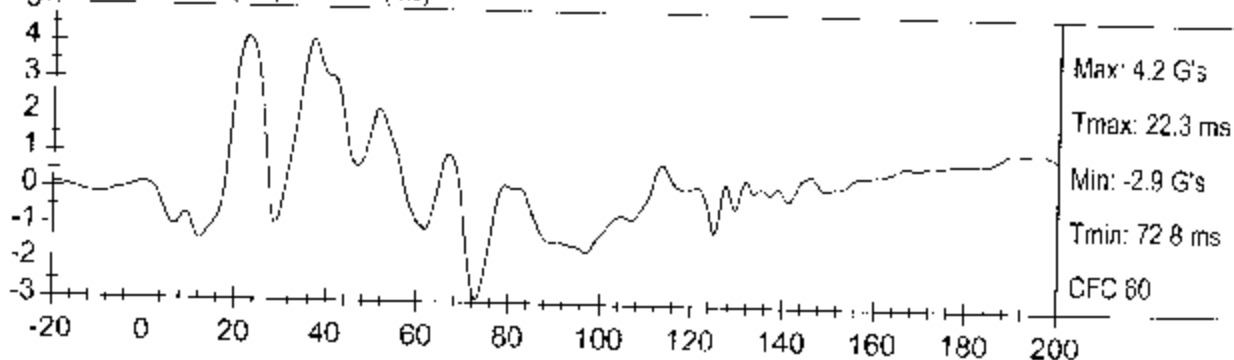


LEFT MID B-POST Y Velocity (kph) vs TIME (ms)

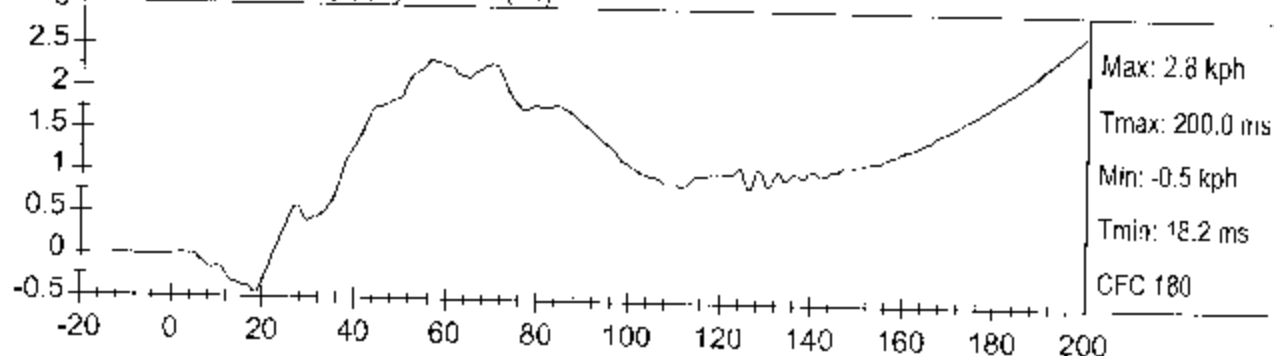


**mga**FMVSS 201P
2003 HONDA ACCORD (C35301)Test Date: 3/24/2003
Speed: 17.8 mph (28.6 km/h)

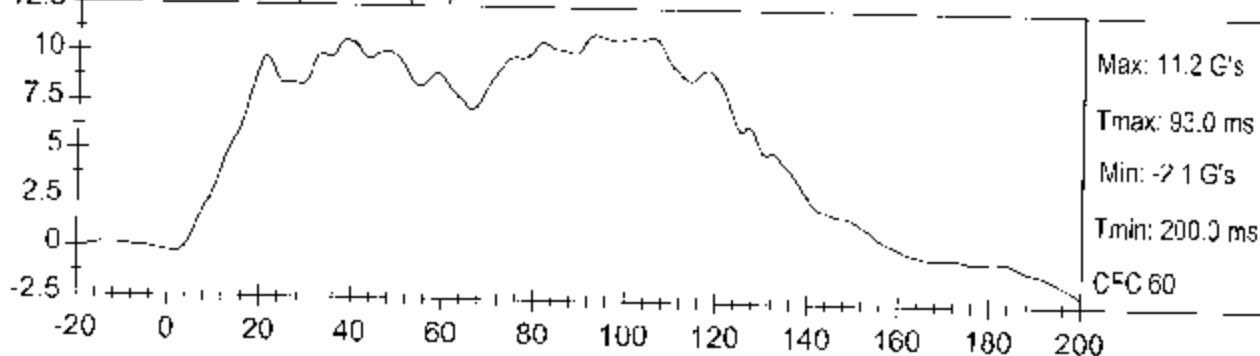
5 REAR DECK X (G's) vs TIME (ms)



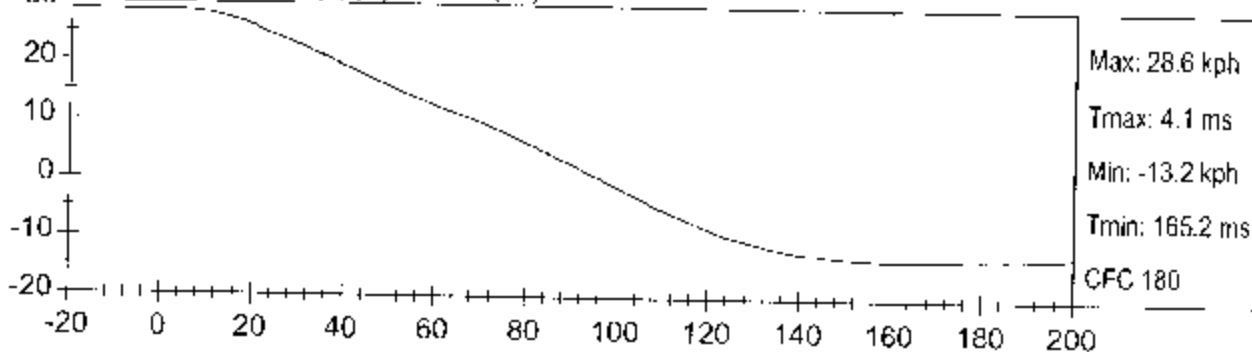
3 REAR DECK X Velocity (kph) vs TIME (ms)



12.5 REAR DECK Y (G's) vs TIME (ms)



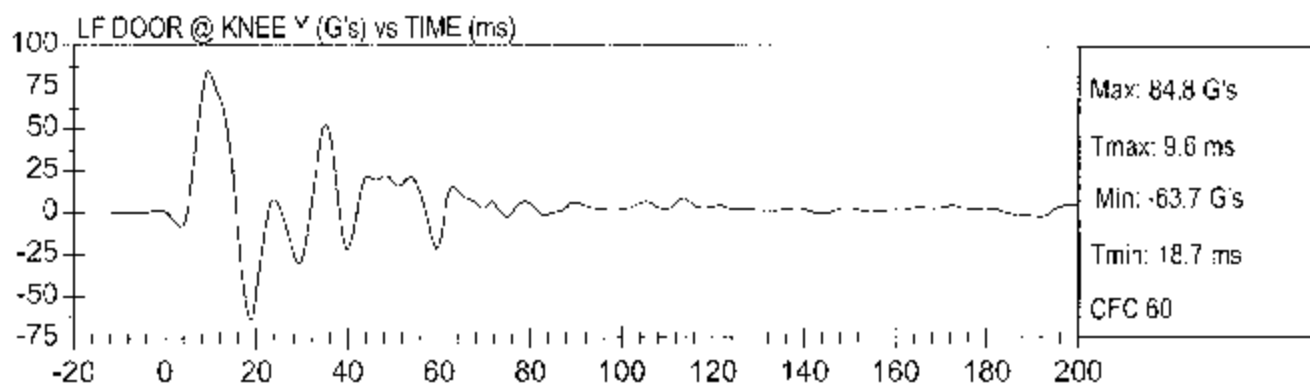
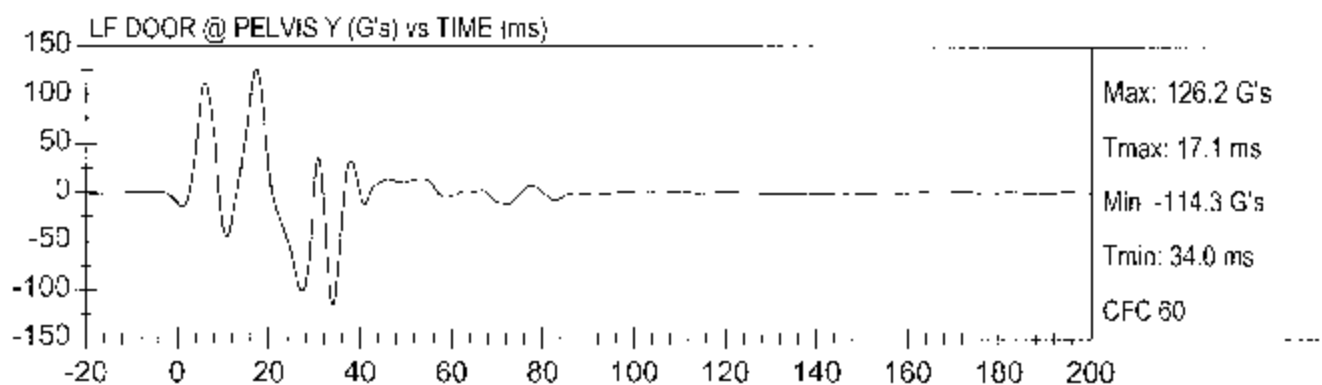
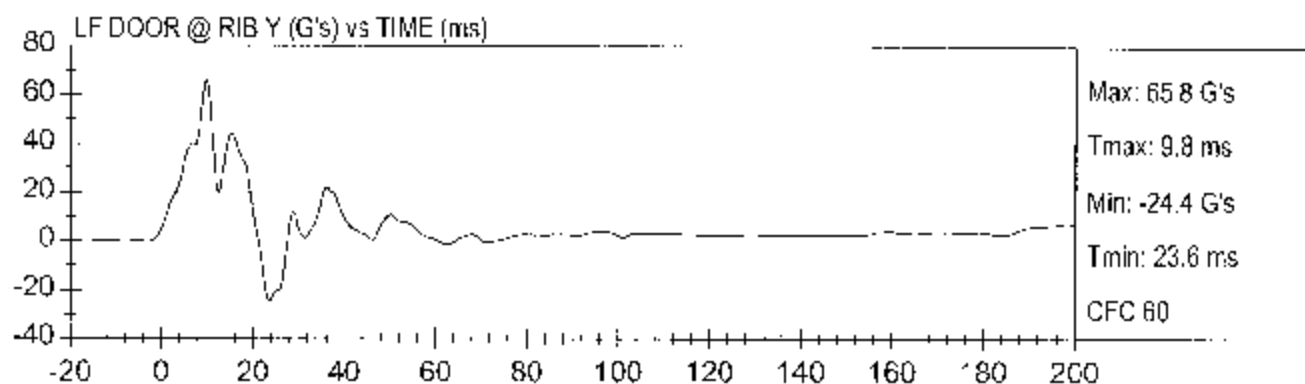
30 REAR DECK Y Velocity (kph) vs TIME (ms)





FMVSS 201P
2003 HONDA ACCORD (C35301)

Test Date: 3/24/2003
Speed: 17.8 mph (28.6 km/h)

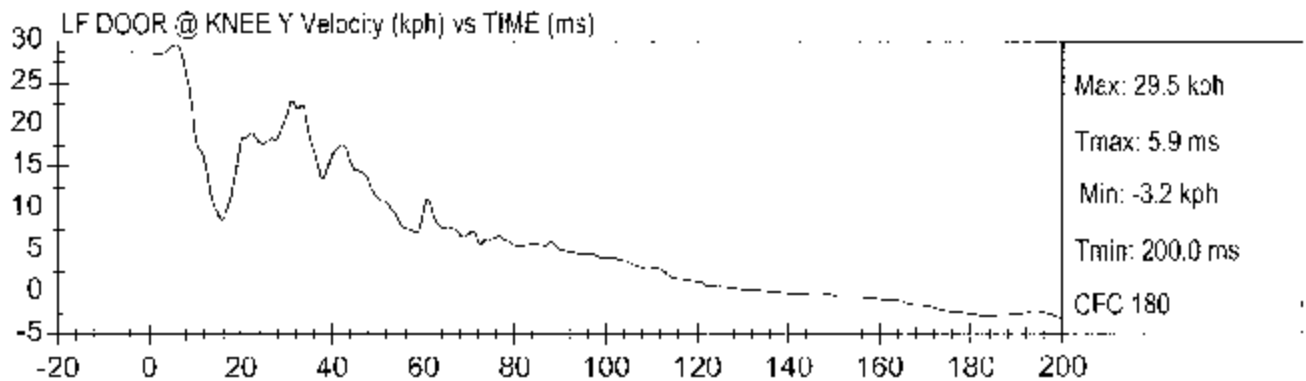
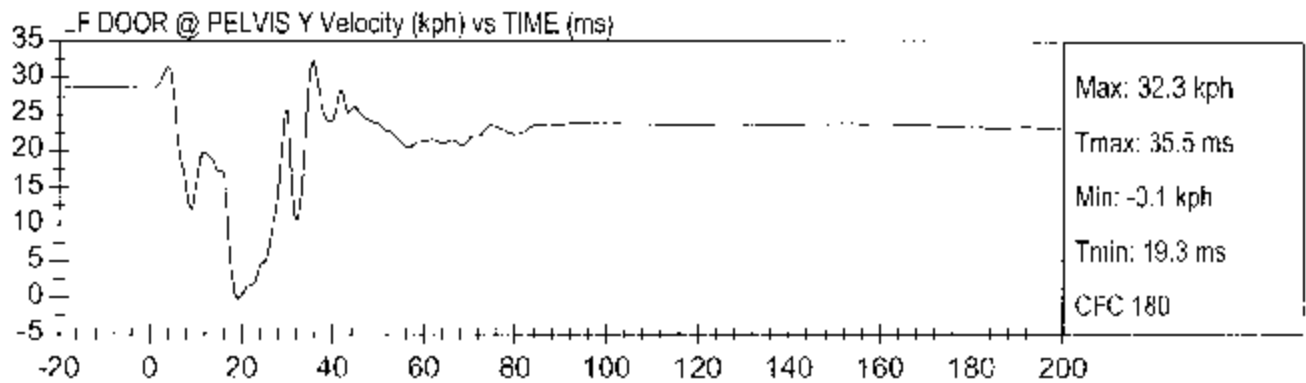
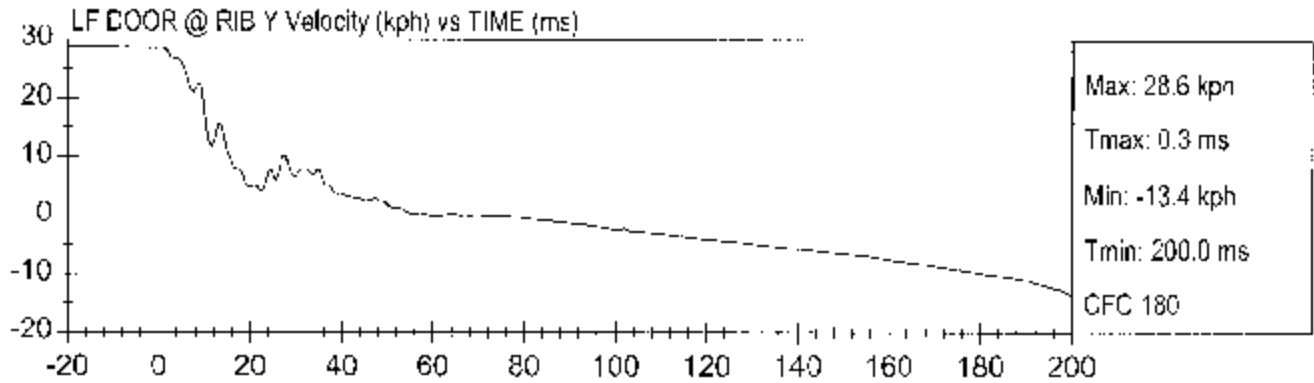




mga

FMVSS 201P
2003 HONDA ACCORD (C3530')

Test Date: 3/24/2003
Speed: 17.8 mph (28.6 km/h)

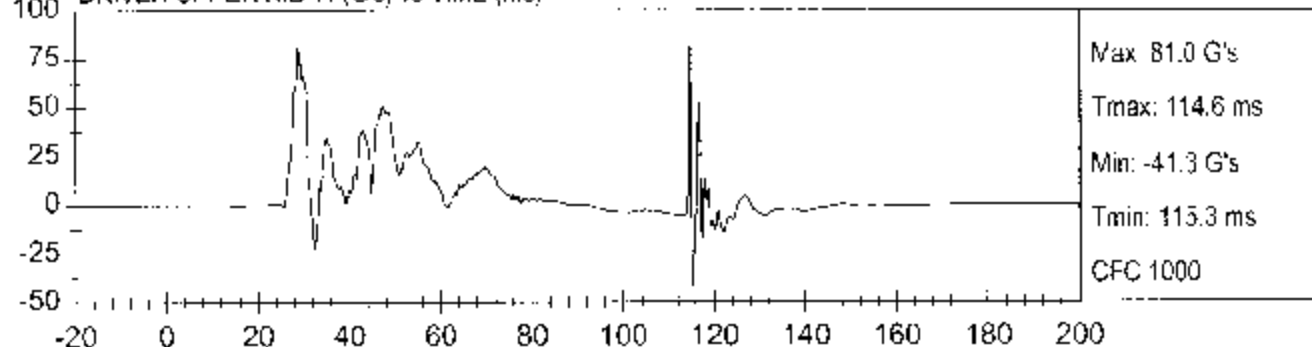




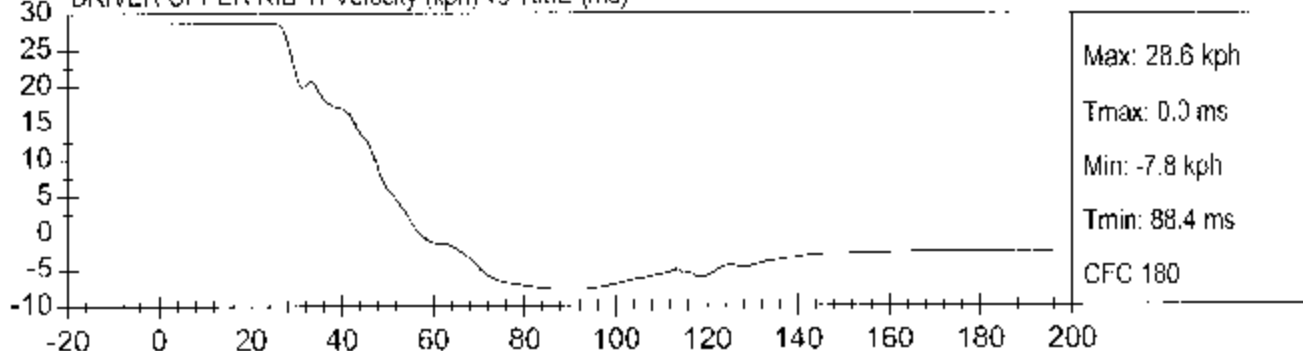
FMVSS 201P
2003 HONDA ACCORD (C35301)

Test Date: 3/24/2003
Speed: 17.8 mph (28.6 km/h)

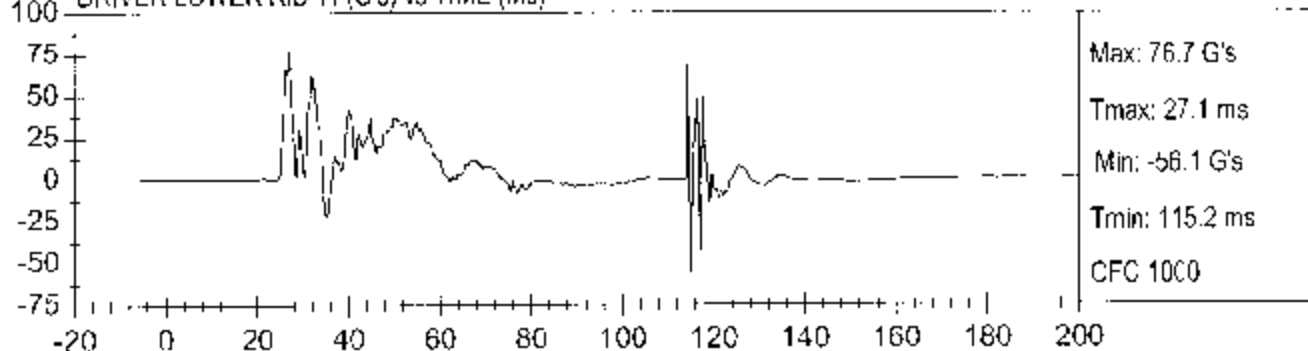
DRIVER UPPER RIB Yr (G's) vs TIME (ms)



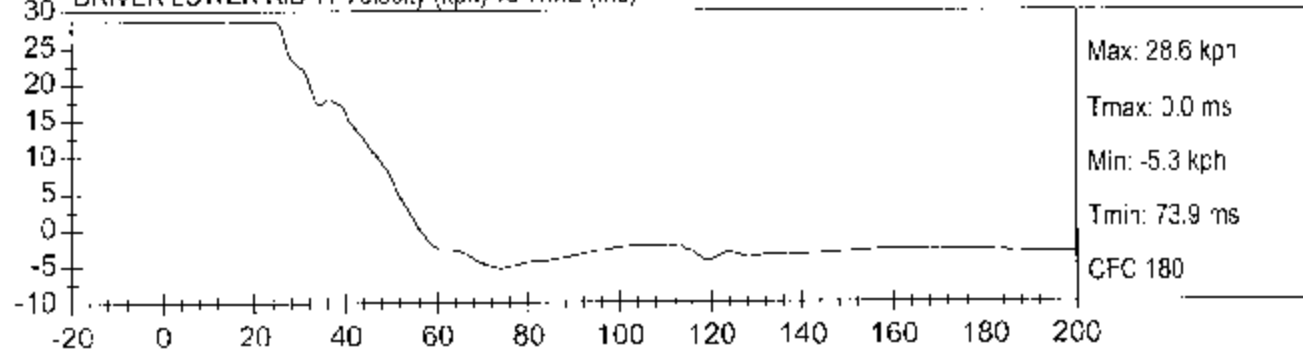
DRIVER UPPER RIB Yr Velocity (kph) vs TIME (ms)



DRIVER LOWER RIB Yr (G's) vs TIME (ms)



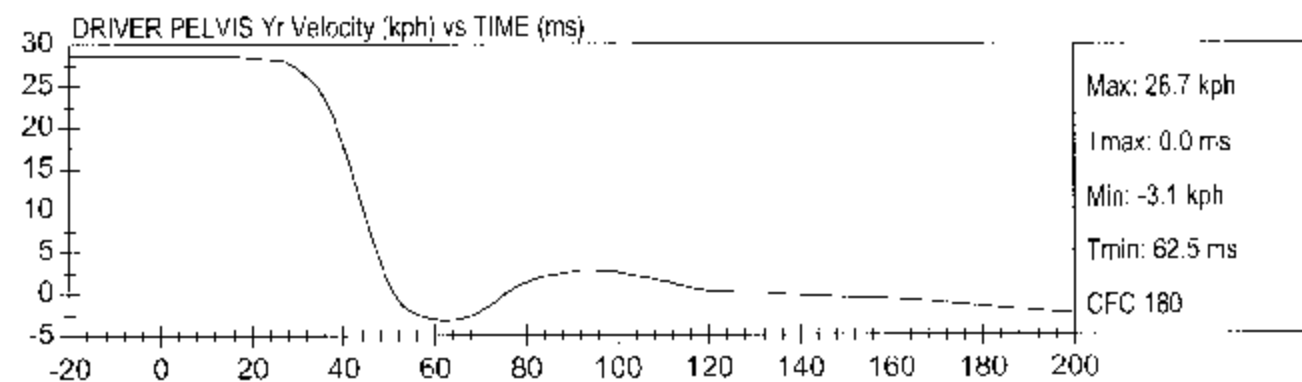
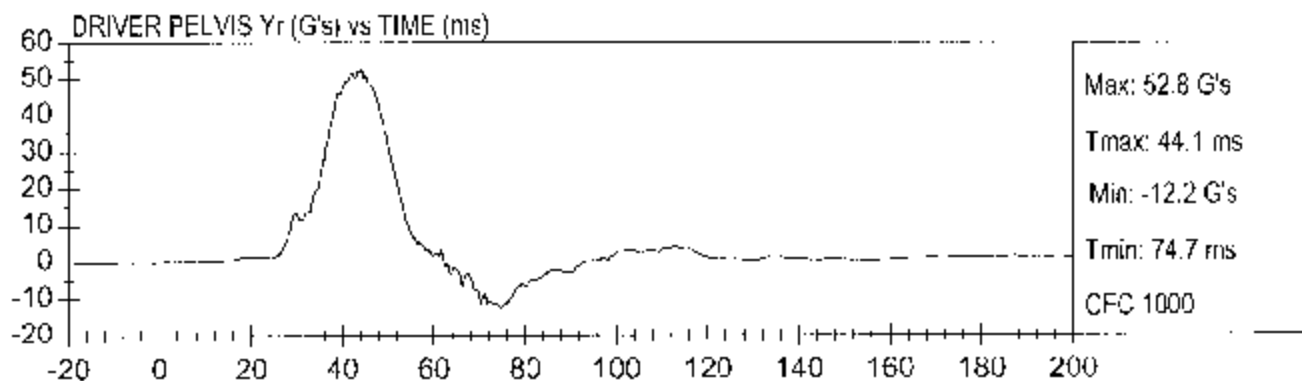
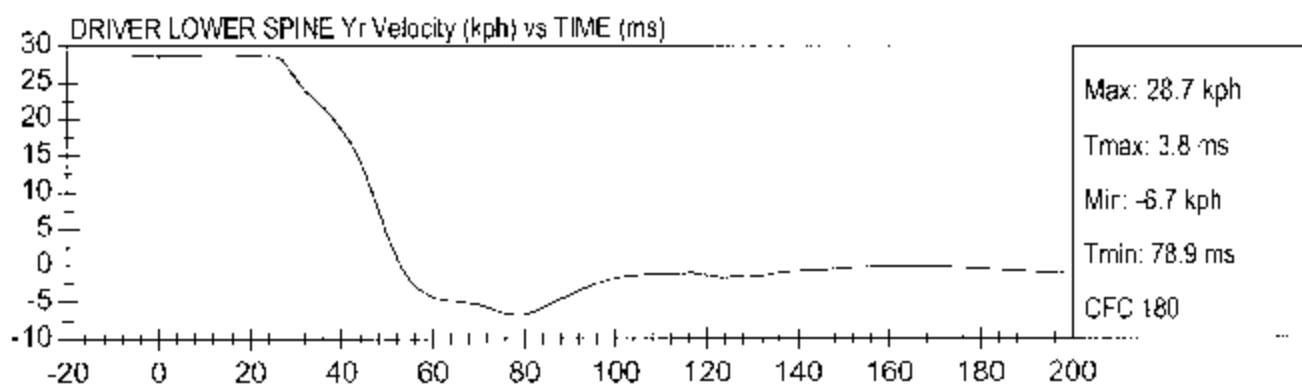
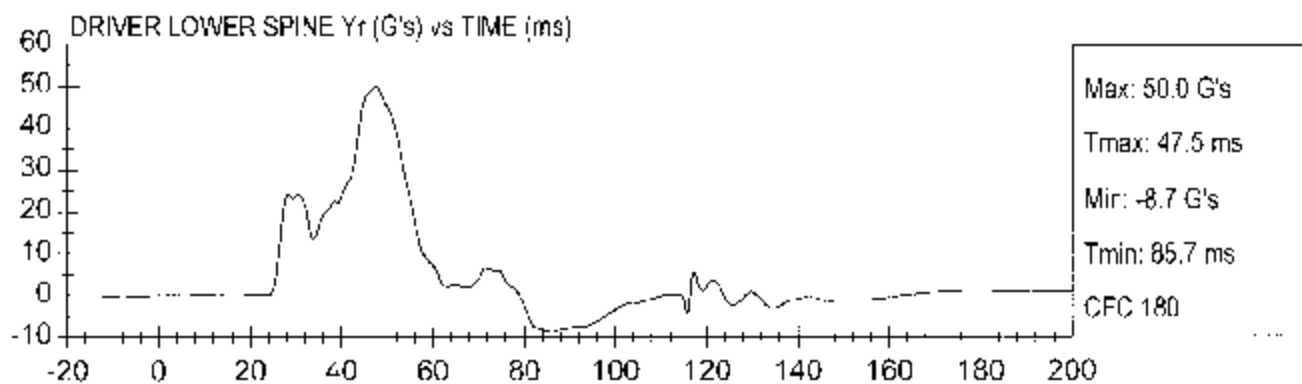
DRIVER LOWER RIB Yr Velocity (kph) vs TIME (ms)





FMVSS 201P
2003 HONDA ACCORD (C35301)

Test Date: 3/24/2003
Speed: 17.8 mph (28.6 km/h)

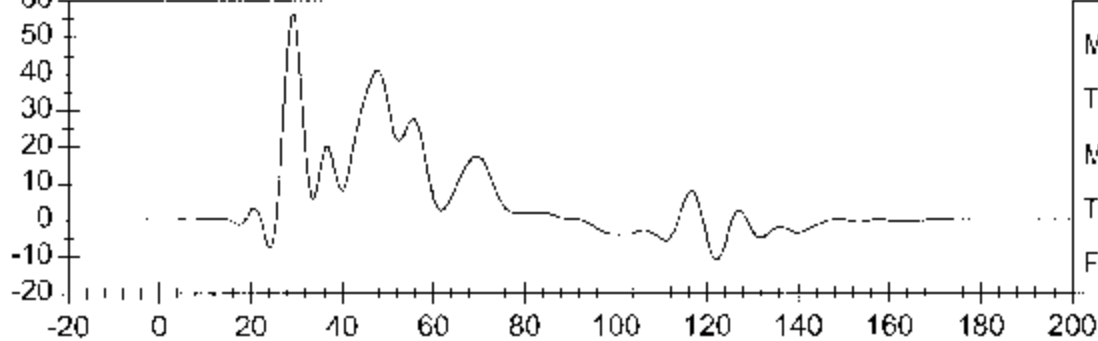




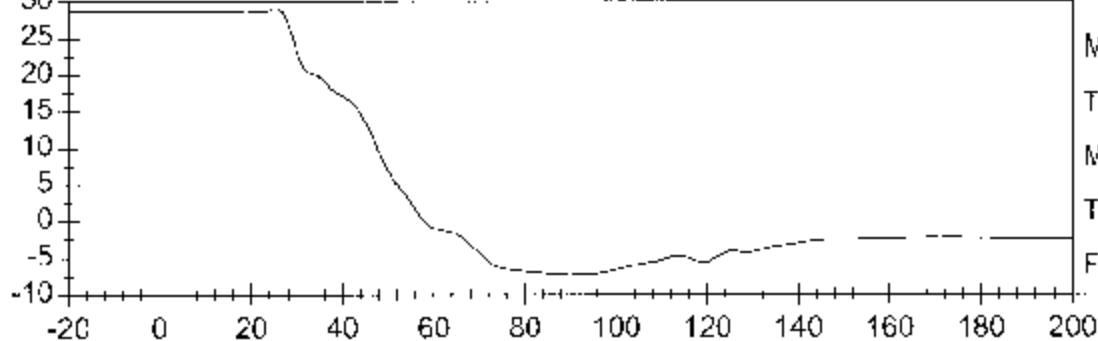
FMVSS 201P
2003 HONDA ACCORD (C35301)

Test Date: 3/24/2003
Speed: 17.8 mph (28.6 km/h)

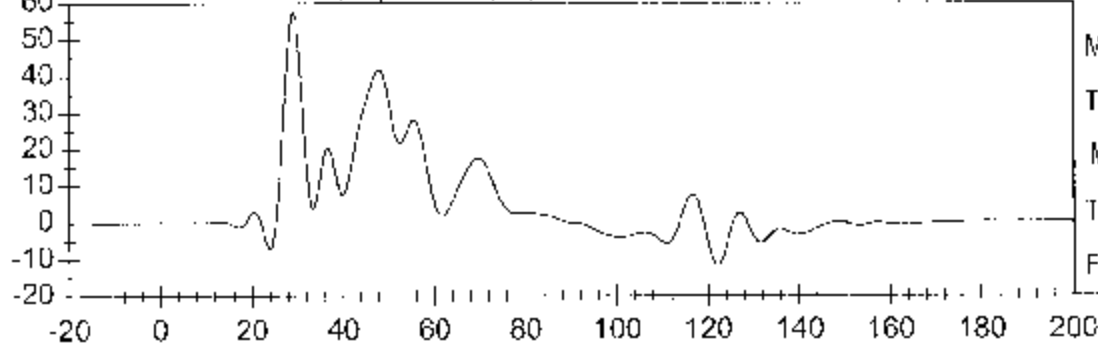
DRIVER UPPER RIB Y (G's) vs TIME (ms)



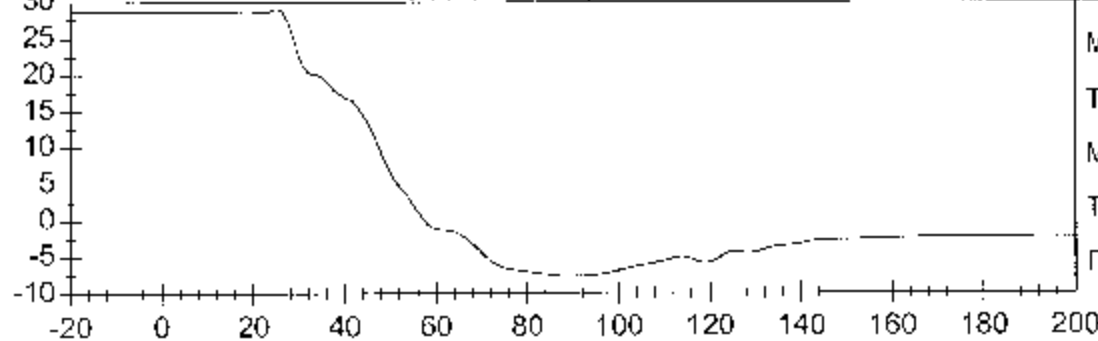
DRIVER UPPER RIB Y Velocity (kph) vs TIME (ms)



DRIVER UPPER RIB Yr (G's) vs TIME (ms)



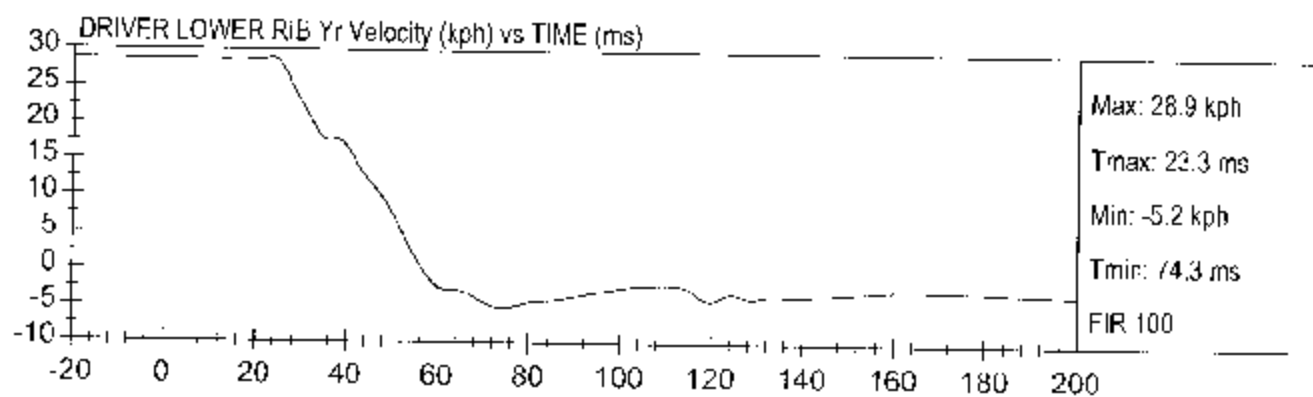
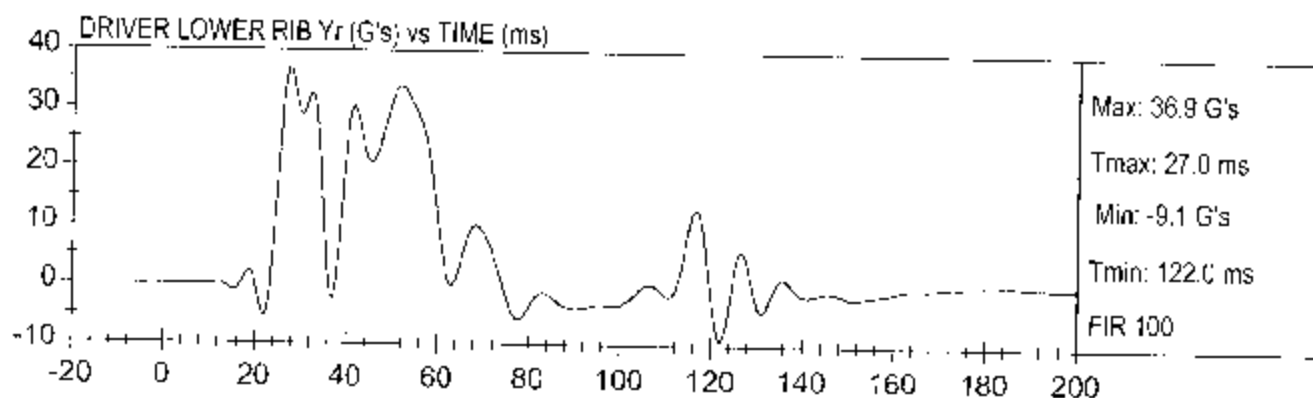
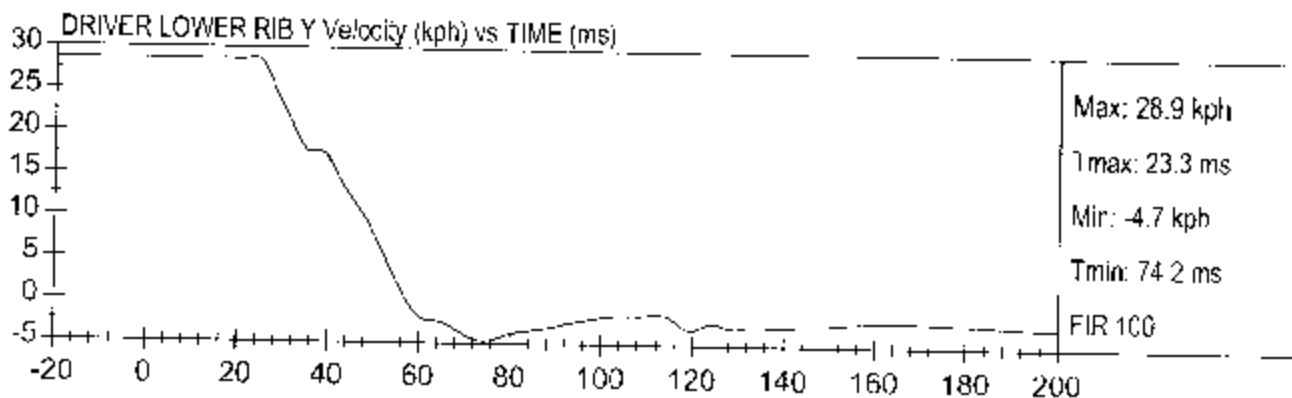
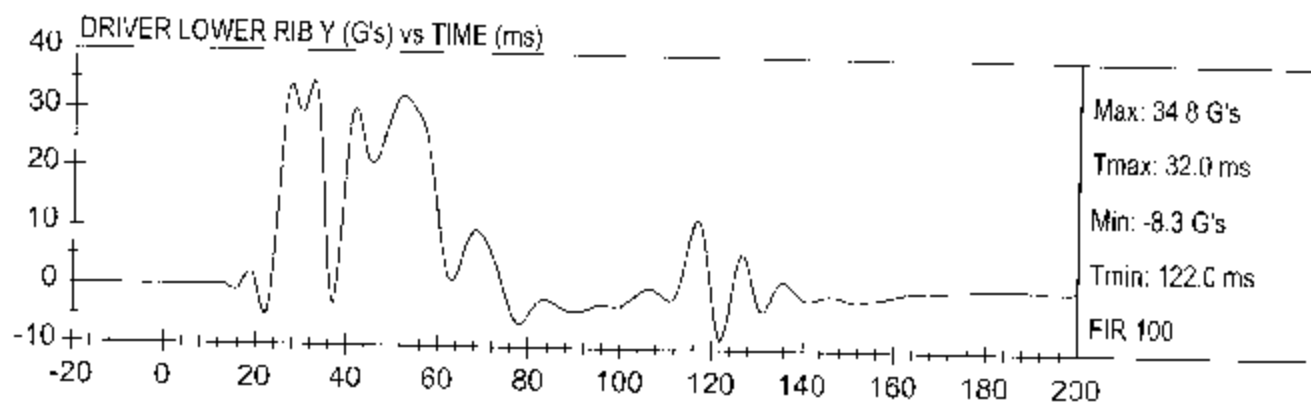
DRIVER UPPER RIB Yr Velocity (kph) vs TIME (ms)





FMVSS 201P
2003 HONDA ACCORD (C353G1)

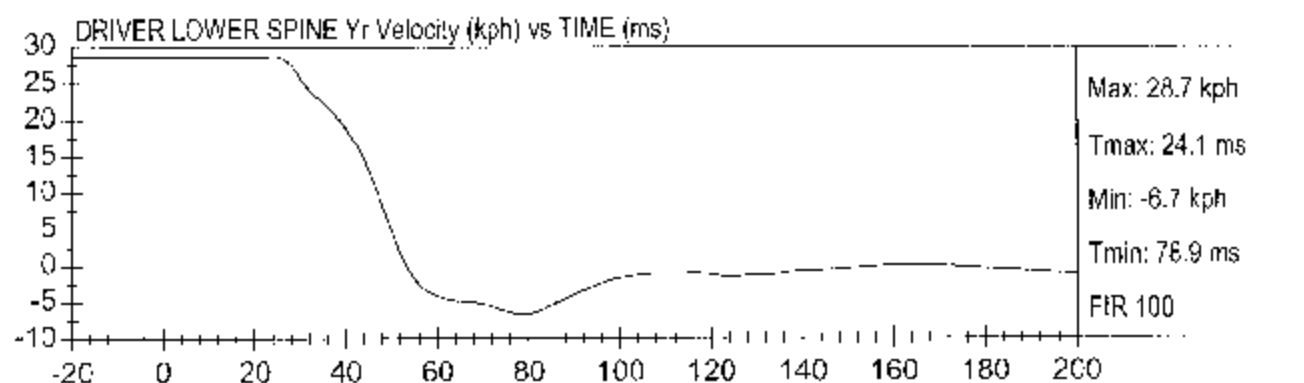
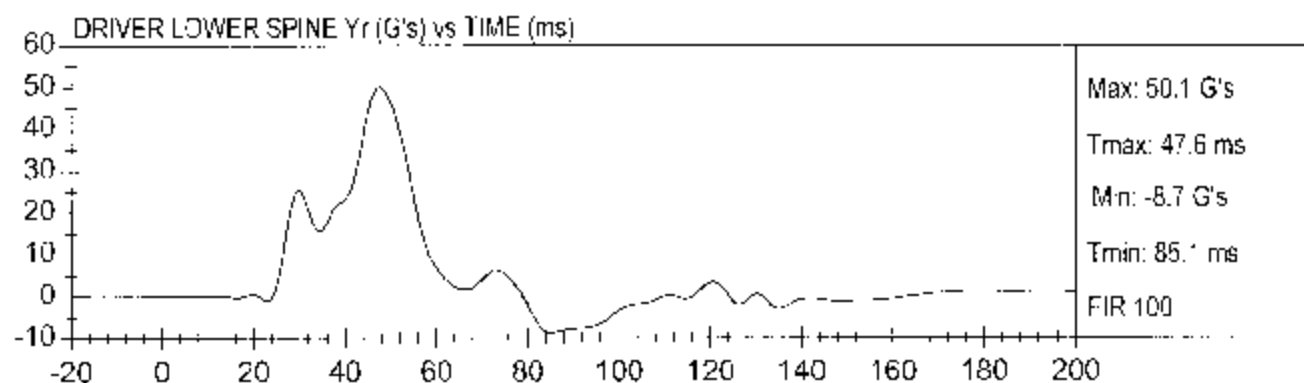
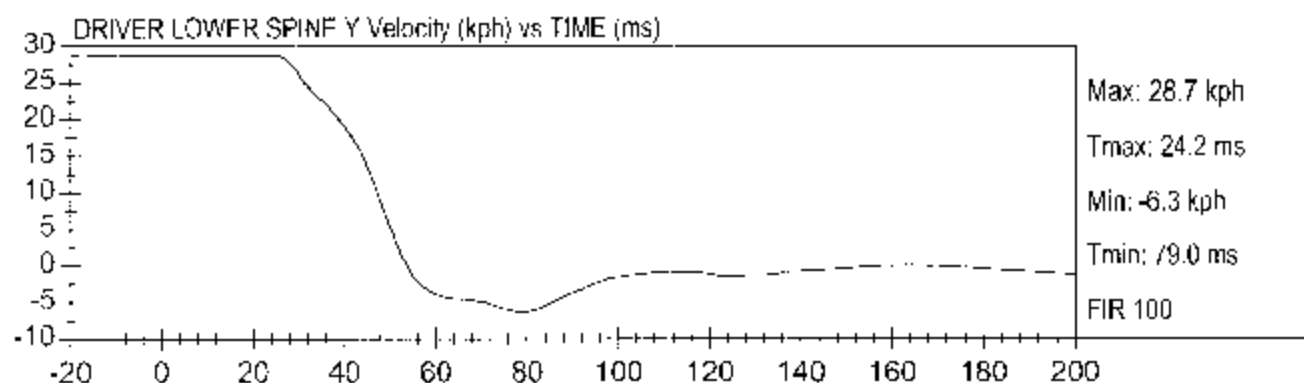
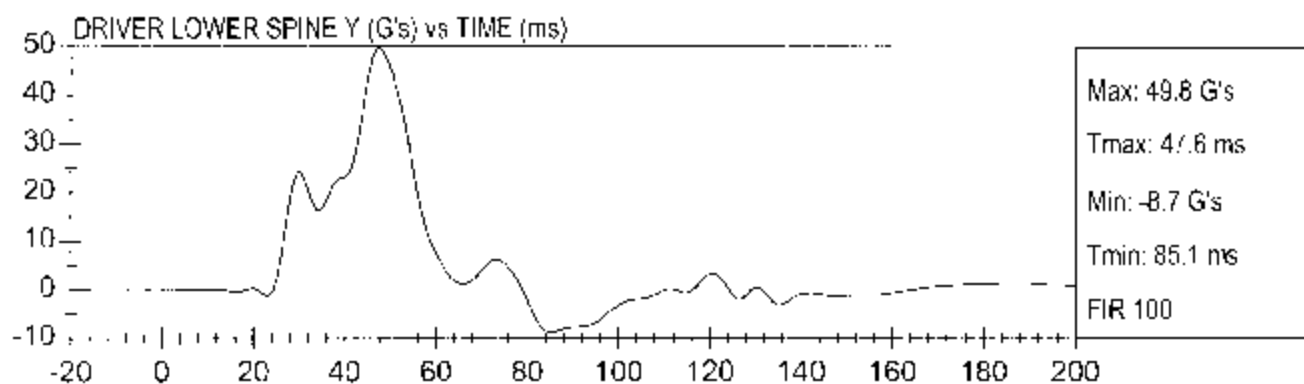
Test Date: 3/24/2003
Speed: 17.8 mph (28.6 km/h)





FMVSS 201P
2003 HONDA ACCORD (C36301)

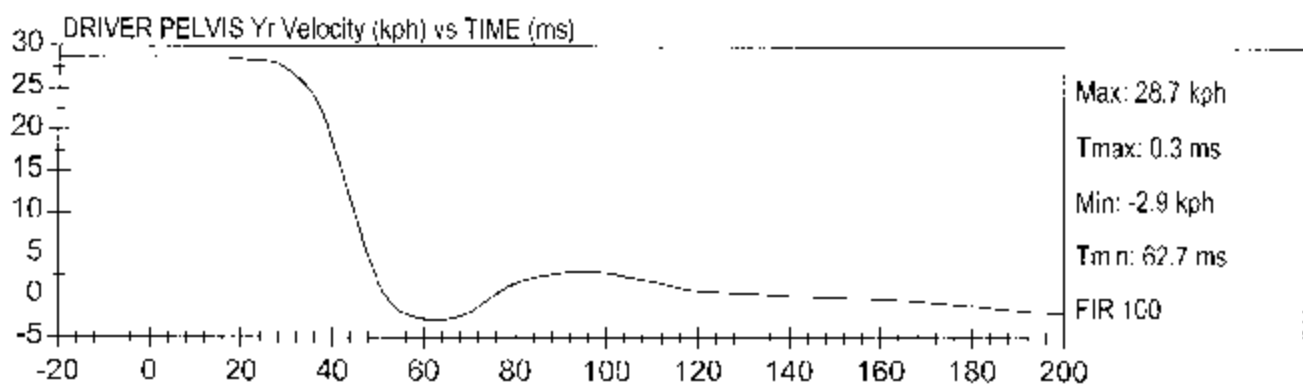
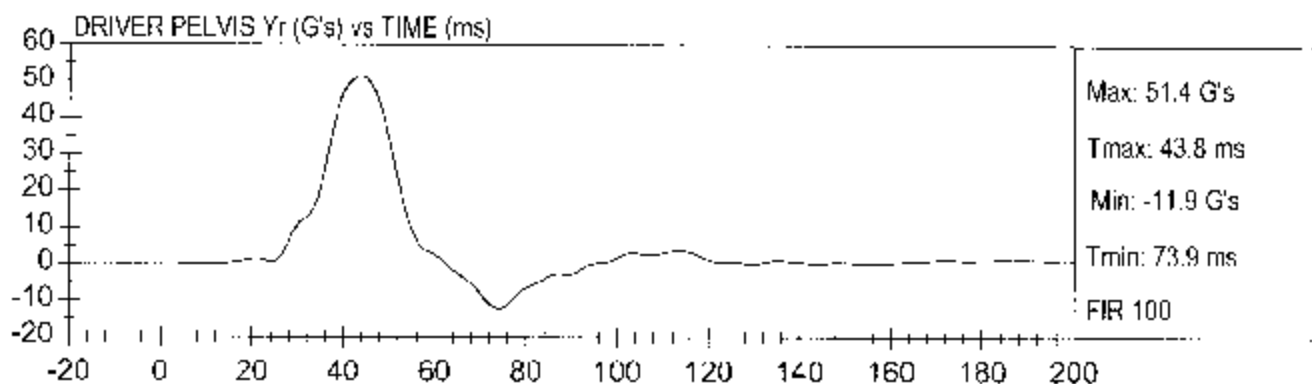
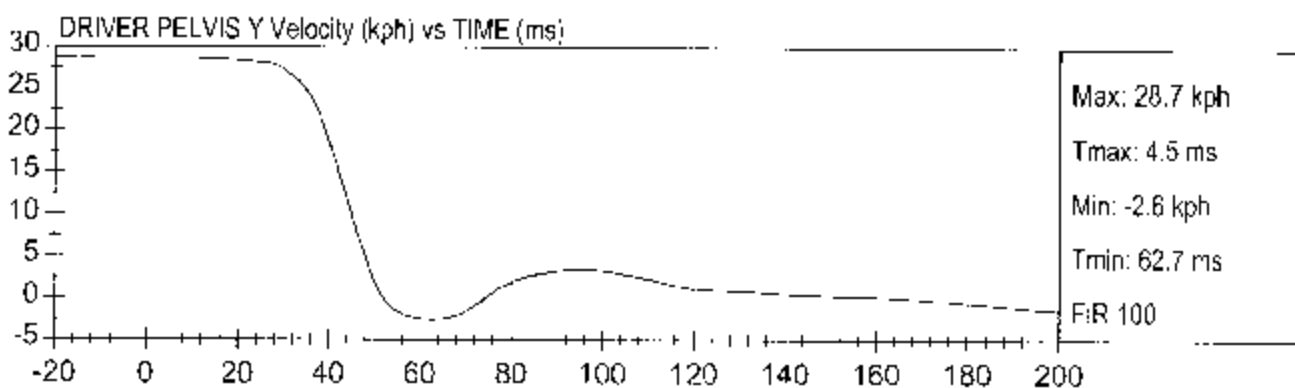
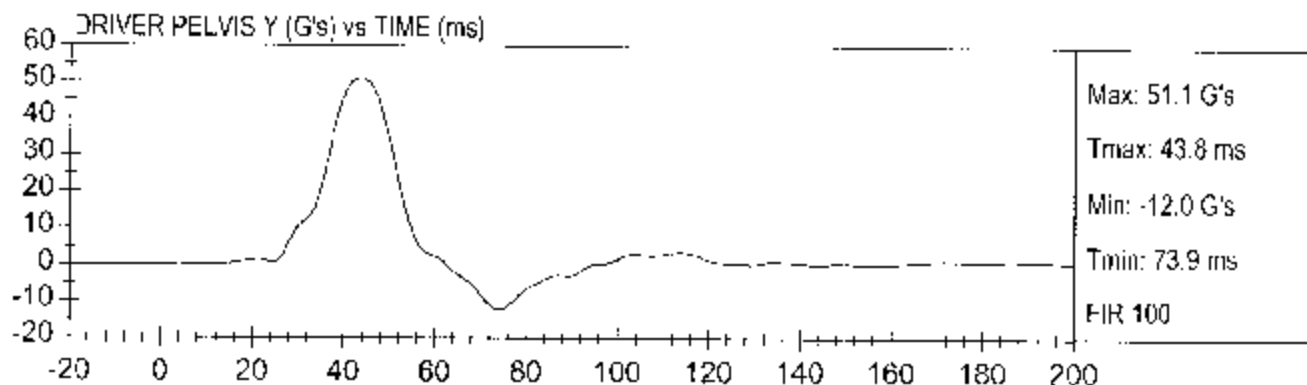
Test Date: 3/24/2003
Speed: 17.8 mph (28.6 km/h)





FMVSS 201P
2003 HONDA ACCORD (C3530*)

Test Date: 3/24/2003
Speed: 17.8 mph (28.6 km/h)



APPENDIX C

SID/HIII CONFIGURATION AND PERFORMANCE VERIFICATION DATA

SID/HIII CALIBRATION DATA SHEET
SIDE IMPACT DUMMY
CONFIGURED TO LEFT SIDE IMPACT

Technician: Tim Michnay

Test Parameter		Specification	Dummy Serial Number: 036	
			Pre-Test	Post-Test
SH-Seated Height (mm)		889 – 909	903	903
RH-Rib Height (mm)		501 – 521	513	513
HP-Hip Pivot Height (mm)		99 ref.	99	99
RD-Rib from Back Line (mm)		229 – 241	232	232
KV-Knee Pivot from Back Line (mm)		511 -526	519	519
SW-Knee Pivot to Floor (mm)		490 – 505	496	496
HW-Hip Width (mm)		356 - 391	383	383
Head Drop				
Temperature (°C)		18.9 – 25.5	21.6	21.4
Relative Humidity (%)		10 – 70	27	28
Peak Resultant Acceleration (G's)		120 – 150	125	124
Is Resultant Curve Unimodal		15% of Peak	Yes	Yes
Peak Longitudinal Acceleration (G's)		+/- 15	-6	-10
Neck Pendulum Test				
Temperature (°C)		20.6 – 22.2	21.0	21.3
Relative Humidity (%)		10 – 70	20	21
Impact Velocity (m/s)		6.89 – 7.13	7.03	7.02
Pendulum Deceleration	10 msec	1.96 – 2.55	2.27	2.46
	20 msec	4.12 – 5.10	4.48	4.83
	30 msec	5.73 – 7.01	6.26	6.77
	40 – 70 msec	6.27 – 7.64	6.94	7.04
Midsagittal Plane Max Rotation (deg)		66 – 82	71	73
Head Rotation Peak to Zero – Decay Time (msec)		58 – 67	61	60
Max. Mx at Occipital Condyles (Nm)		73 – 88	79	77
Mx Peak to Zero – Decay Time (msec)		49 – 64	54	57
Mx Peak to Max. Head Rotation (msec)		2 – 16	12	14

SID/HIII CALIBRATION DATA SHEET (continued)

Test Parameter	Specification	Dummy Serial Number: 036	
		Pre-Test	Post-Test
Thorax Impact			
Temperature (°C)	18.9 – 25.5	20.2	21.4
Relative Humidity (%)	10 – 70	22	28
Probe Speed (m/s)	4.27 – 4.33	4.27	4.30
Upper Rib (g's)	37 – 46	41	43
Lower Rib (g's)	37 – 46	45	41
Lower Spine (g's)	15 – 22	19	17
Pelvis Impact			
Temperature (°C)	18.9 – 25.5	20.2	21.4
Relative Humidity (%)	10 – 70	22	28
Probe Speed (m/s)	4.27 – 4.33	4.29	4.27
Pelvis (g's)	40 - 60	46	45
Abdominal Compression			
Temperature (°C)	18.9 – 25.5	20.7	20.9
Relative Humidity (%)	10 – 70	14	29
Force @ 12.7 mm (N)	104 – 162	150	143
Force @ 19 mm (N)	163 – 222	210	194
Force @ 25.4 mm (N)	222 – 280	271	262
Force @ 33 mm (N)	325 – 391	381	358
Lumbar Flexion			
Temperature (°C)	18.9 – 25.5	20.7	21.1
Relative Humidity (%)	10 – 70	14	28
Force @ 0 deg (N)	0 – 26.7	0.0	0.0
Force @ 20 deg (N)	97.9 – 151.2	109.5	118.7
Force @ 30 deg (N)	151.2 – 204.6	160.1	179.9
Force @ 40 deg (N)	204.6 – 258.0	210.8	241.0
Return Angle (deg)	12 maximum	6	8

CERTIFICATION DATA

Dummy Serial Number: 036

CERTIFICATION DATA

Dummy Serial Number: 036

Pre-Test Calibration

External Dimensions:	The dummy passed all external dimension requirements.
Head Drop Test:	The head passed all drop test requirements.
Thorax Impact Test:	The thorax passed all impact test requirements.
Pelvis Impact Test:	The pelvis passed all impact test requirements.
Abdominal Compression Test:	The abdomen passed all compression test requirements.
Lumbar Flexion Test:	The lumbar passed all flexion test requirements.

SID/HIII Calibration Data Sheet
Side Impact Dummy
External Measurements

ATD Serial No: 036

Test I.D.: D0343

Tested Parameter	Units	Specification	Result	Pass/Fail
SH - Seated Height	mm	889 - 909	903	Pass
RH - Rib Height	mm	501 - 521	513	Pass
HP - Hip Pivot Height	mm	99 ref.	99	Pass
RD - Rib from Back Line	mm	229 - 241	232	Pass
KV - Knee Pivot to Back Line	mm	511 - 526	519	Pass
SW - Knee Pivot to Floor	mm	490 - 505	496	Pass
HW - Hip Width	mm	356 - 391	383	Pass
Overall Test Results				Pass


 Laboratory Technician

3/21/03
 Test Date


 Approved By

SID/HIII Calibration Data Sheet
Side Impact Dummy
Head Drop Calibration (Lateral)

ATD Serial No: 036

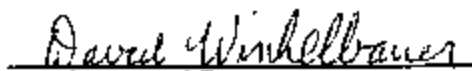
Test I.D: D03431

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.5	21.6	Pass
Laboratory Relative Humidity	%	10 to 70	27	Pass
Peak Resultant Acceleration	G's	120 to 150	125	Pass
Is Resultant Curve Unimodal?	Yes/No	15% of peak	Yes	Pass
Peak Longitudnal Acceleration	G's	+/- 15	-6	Pass
Overall Test Results				Pass



Laboratory Technician

03/21/2003
Test Date



Approved By



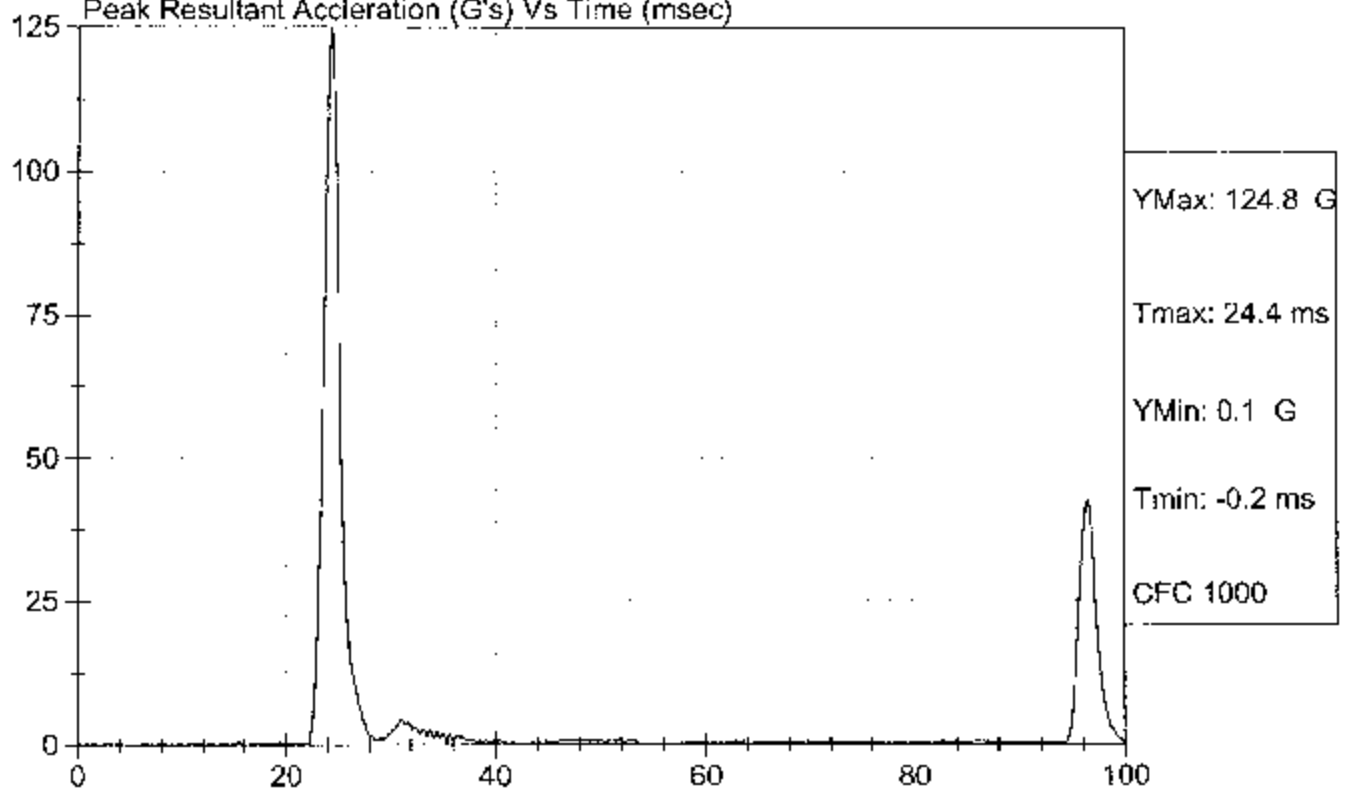
Test Description: Head Drop

Test Date: 03/21/2003

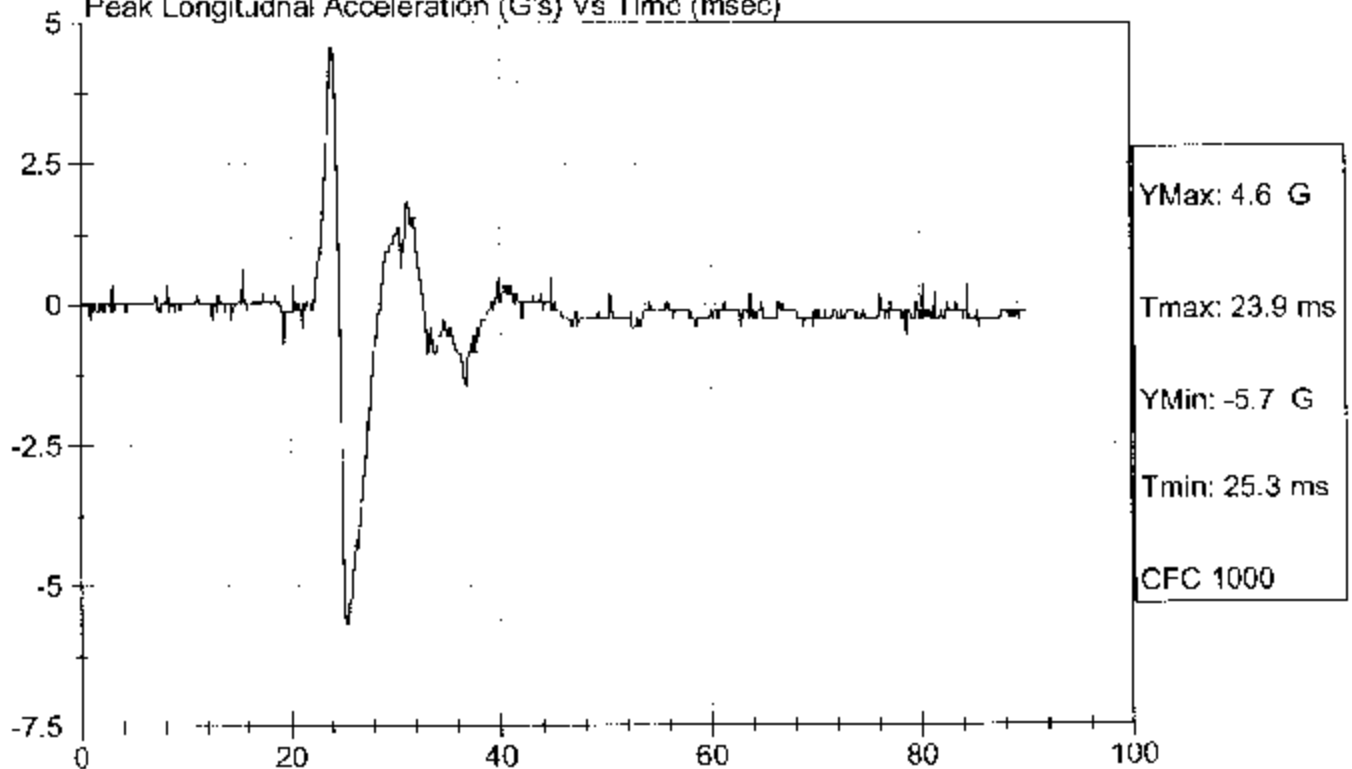
Component: D03431

Speed: 0 ft/s, 0.00 m/s

Peak Resultant Acceleration (G's) Vs Time (msec)



Peak Longitudinal Acceleration (G's) Vs Time (msec)

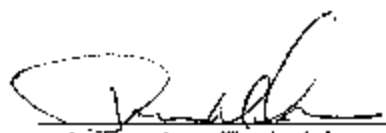


SID/HIII Calibration Data Sheet
Side Impact Dummy (SID)
Neck Pendulum Test

ATD Serial No: 036

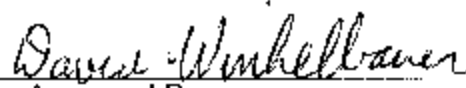
Test I.D: D03119

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		deg C	20.6 to 22.2	21.0	Pass
Laboratory Relative Humidity		%	10 to 70	20	Pass
Impact Velocity		m/s	6.89 to 7.13	7.03	Pass
Pendulum Deceleration	10 msec	m/s	1.96 to 2.55	2.27	Pass
	20 msec	m/s	4.12 to 5.10	4.48	Pass
	30 msec	m/s	5.73 to 7.01	6.26	Pass
	40 to 70 msec	m/s	6.27 to 7.64	6.94	Pass
Midsagittal Plane Max Rotation		deg	66 to 82	71	Pass
Head Rotation Peak to Zero - Decay Time		msec	58 to 67	61	Pass
Max. Mx at Occipital Condyles		Nm	73 to 88	79	Pass
Mx Peak To Zero - Decay Time		msec	49 to 64	54	Pass
Mx Peak to Max. Head Rotation		msec	2 to 16	12	Pass


 Laboratory Technician

02/05/2003

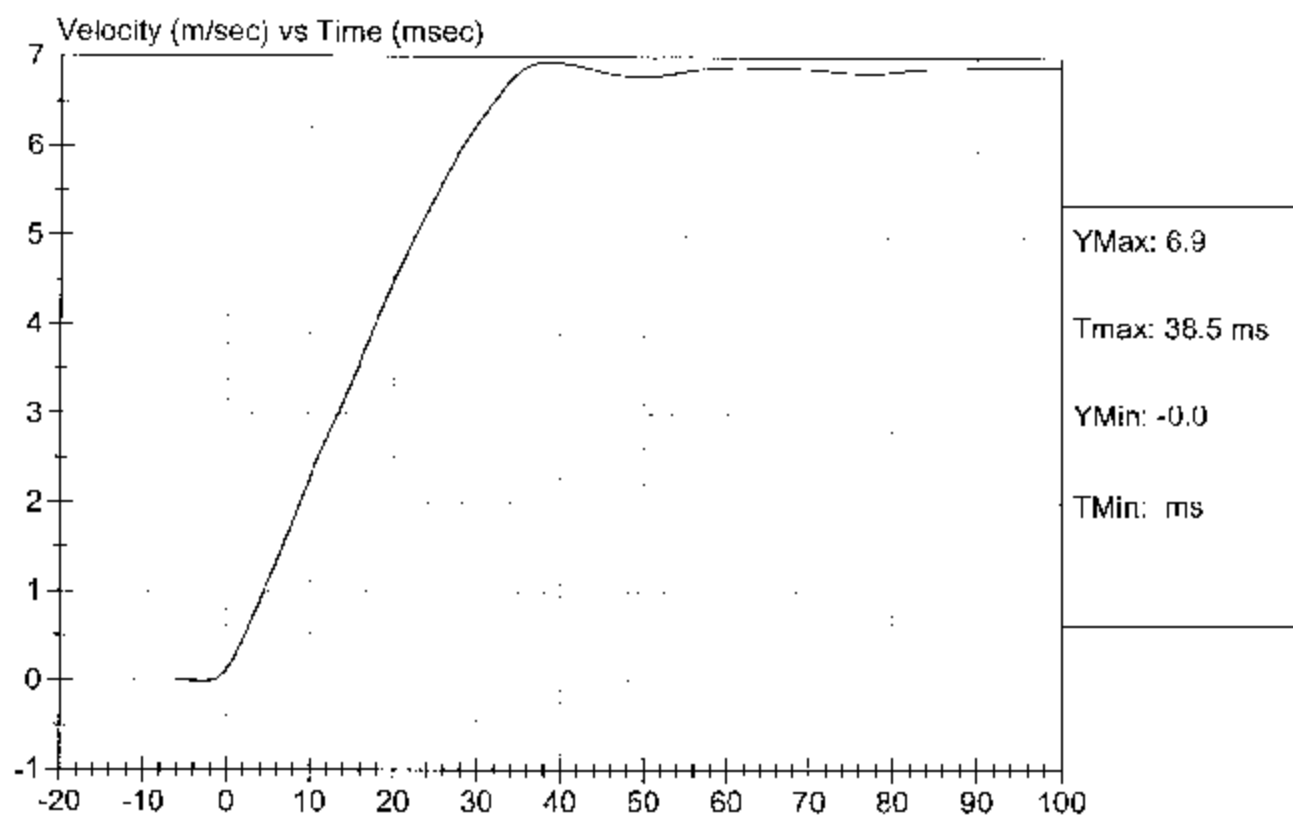
Test Date


 Approved By



Test Desc: Neck Bending
Component ID: D03119

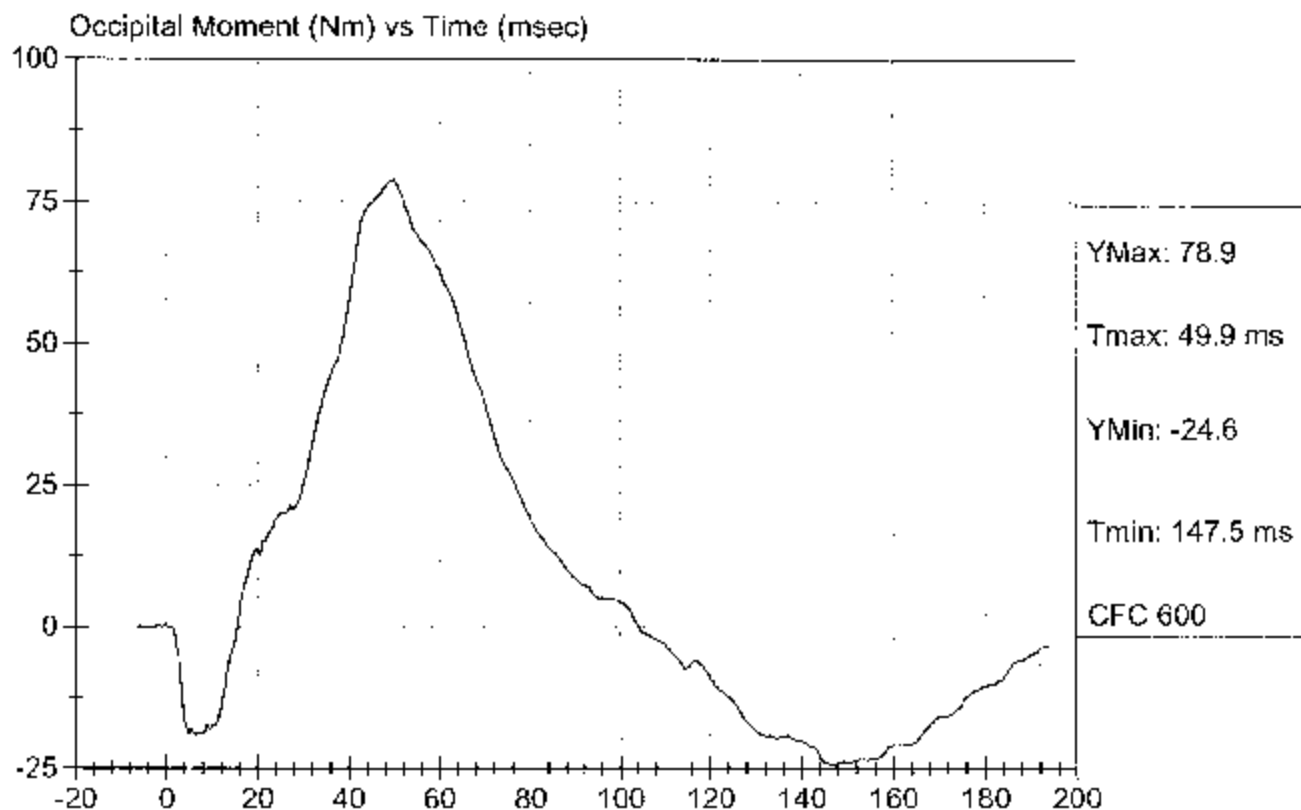
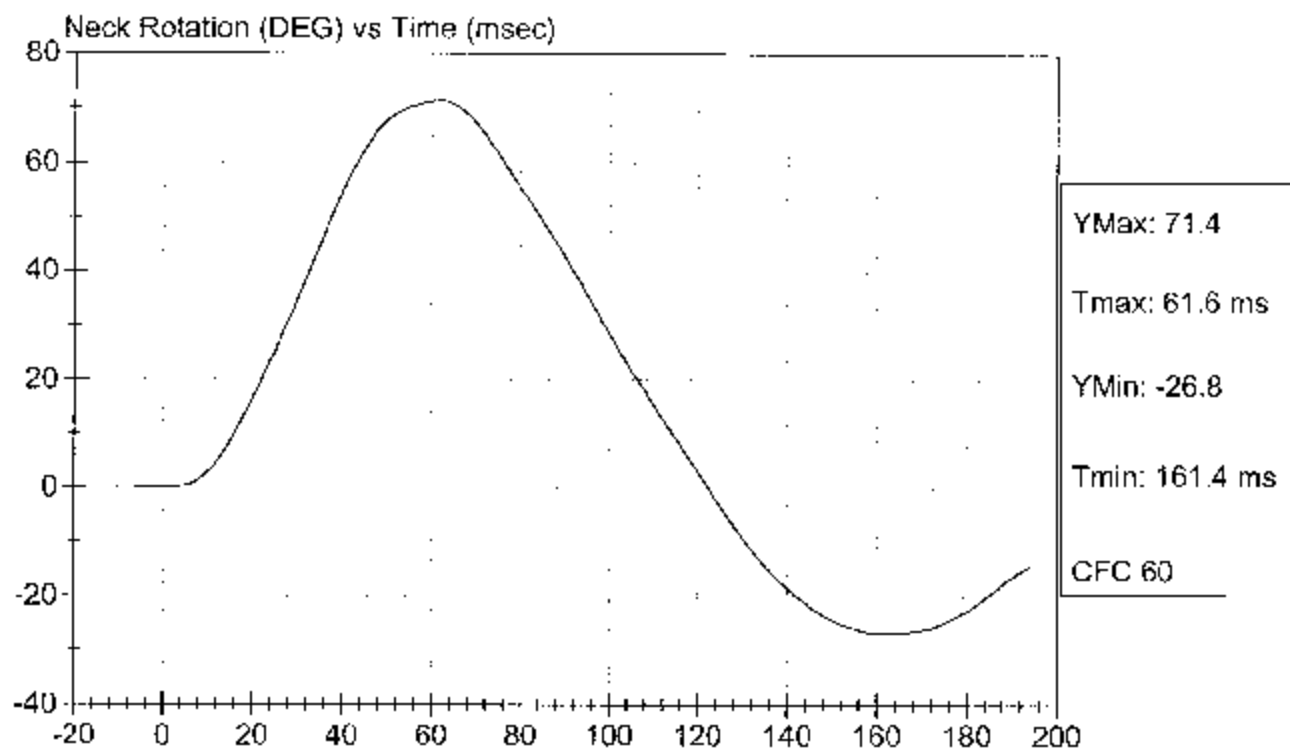
Test Date: 02/05/2003
Speed: 23.07 ft/sec, 7.03 m/sec





Test Desc: Neck Bending
Component ID: D03119

Test Date: 02/05/2003
Speed: 23.07 ft/sec, 7.03 m/sec



SID/HIII Calibration Data Sheet

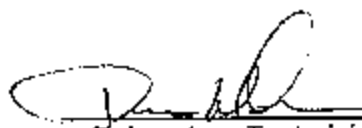
Side Impact Dummy

Thorax Impact Test

ATD Serial No: 036

Test I.D.: D03112

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	20.2	Pass
Laboratory Relative Humidity	%	10 to 70	22	Pass
Probe Velocity	m/s	4.27 - 4.33	4.27	Pass
Upper Rib	G's	37 - 46	41	Pass
Lower Rib	G's	37 - 46	45	Pass
Lower Spine	G's	15 - 22	19	Pass
Overall Test Results				Pass


 Laboratory Technician

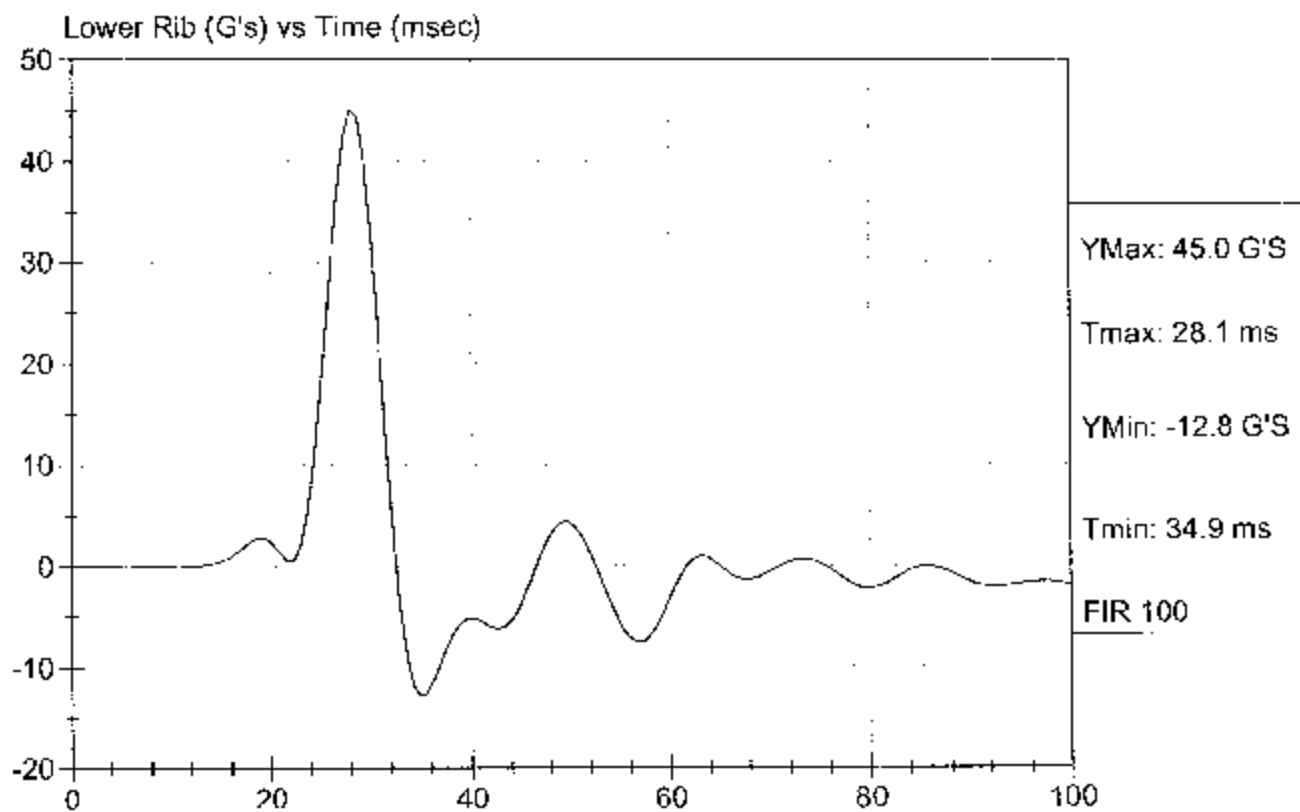
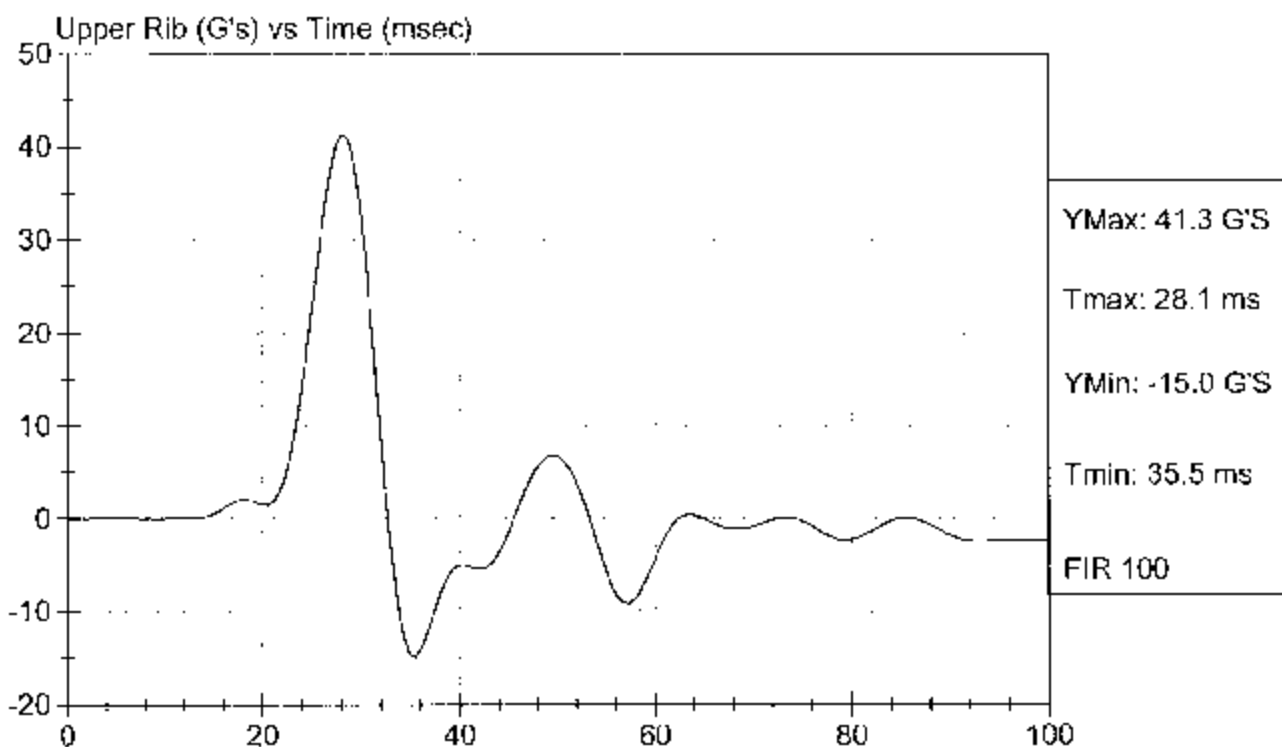
02/06/2003
 Test Date


 Approved By



Test Desc: Thorax Impact
Component ID: D03112

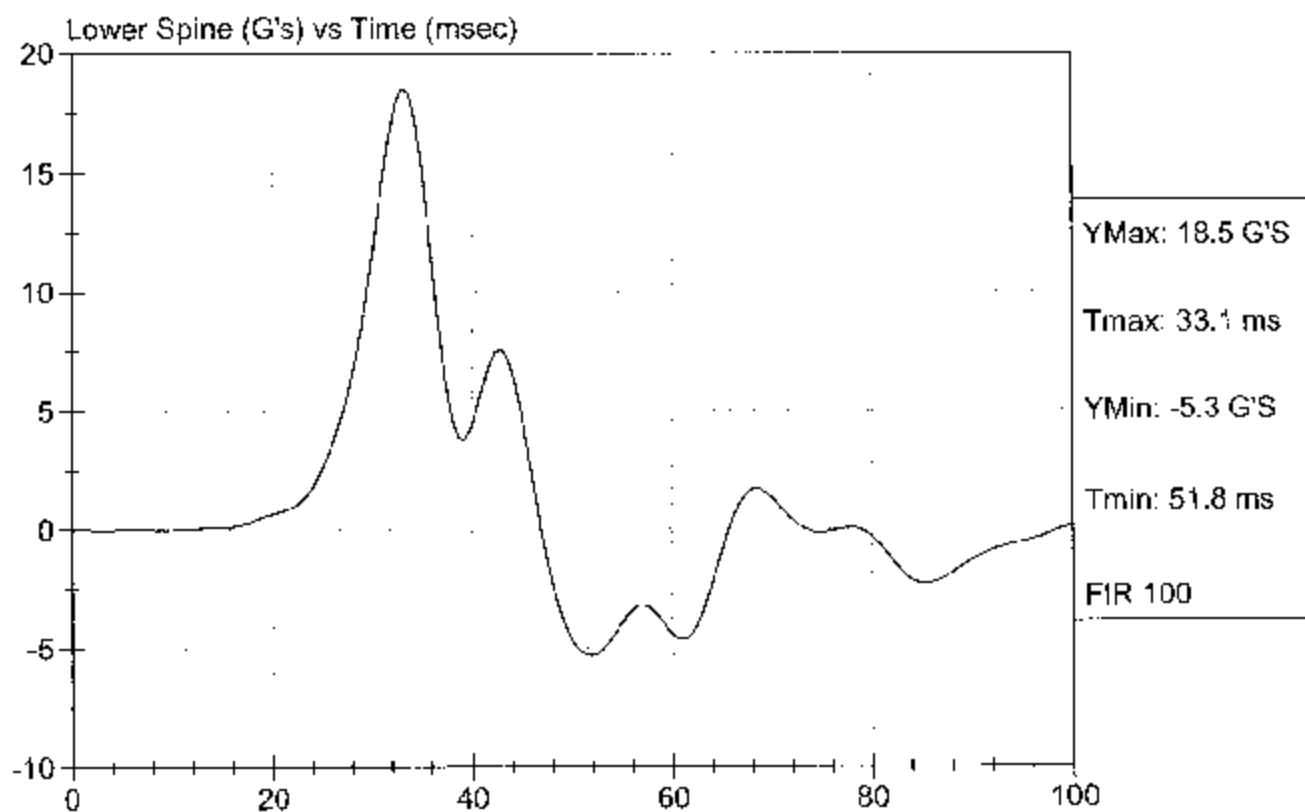
Test Date: 02/06/2003
Speed: 14 ft/sec, 4.27 m/sec





Test Desc: Thorax Impact
Component ID: D03112

Test Date: 02/06/2003
Speed: 14 ft/sec, 7.03 m/sec

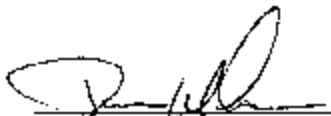


SID/HIII Calibration Data Sheet
Side Impact Dummy
Pelvis Impact Test

ATD Serial No: 036

Test I.D.: D03113

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.5	20.2	Pass
Laboratory Relative Humidity	%	10 to 70	22	Pass
Probe Velocity	m/s	4.27 - 4.33	4.29	Pass
Pelvis Acceleration	G's	40 - 60	46	Pass
Overall Test Results				Pass



Laboratory Technician



Approved By

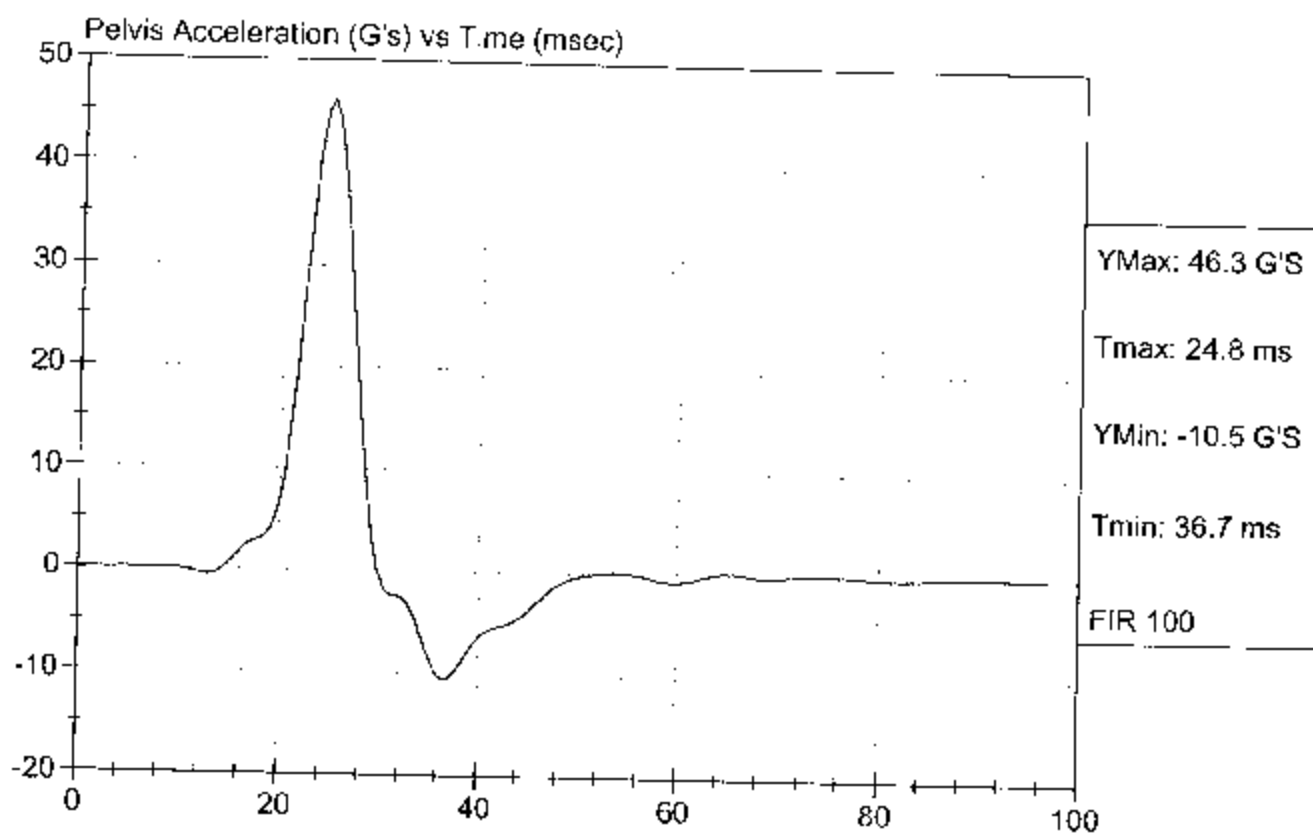
02/06/2003

Test Date



Test Desc: Pelvis Impact
Component ID: D03113

Test Date: 02/06/2003
Speed: 14.08 ft/sec, 4.29 m/sec



SID/HIII Calibration Data Sheet
Side Impact Dummy
Abdominal Compression Calibration (Pre-Load = 10 lbs)

ATD Serial No: 036

Test I.D.: D03114

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	20.7	Pass
Laboratory Relative Humidity	%	10 to 70	14	Pass
Force At 12.7 mm	N	104 - 162	150	Pass
Force At 19 mm	N	163 - 222	210	Pass
Force At 25.4 mm	N	222 - 280	271	Pass
Force At 33 mm	N	325 - 391	381	Pass
Overall Test Results				Pass



Laboratory Technician

02/05/2003

Test Date



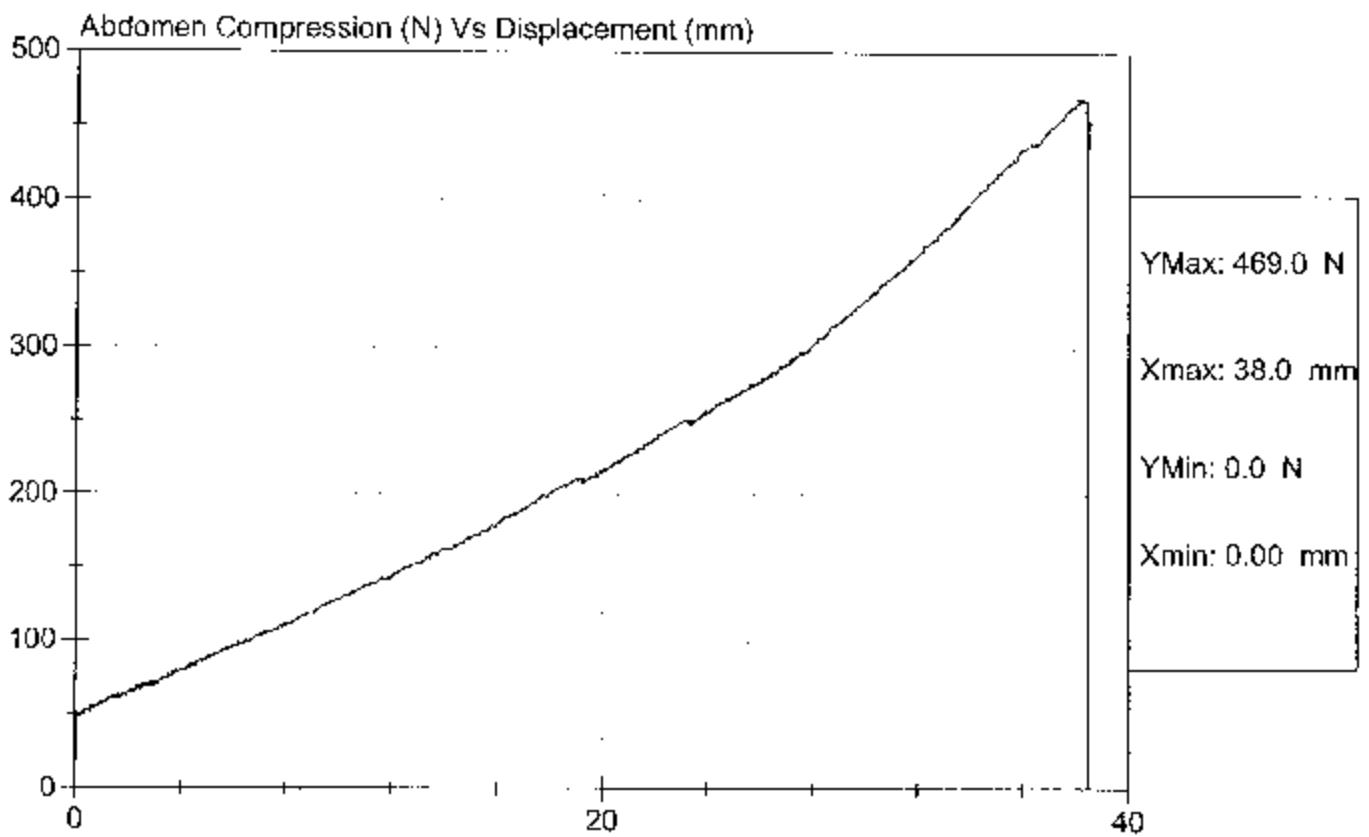
Approved By



Test Description: Abdomen Compression Test Date: 02/05/2003

Component: D03114

Speed: 0 ft/sec, 0 m/sec

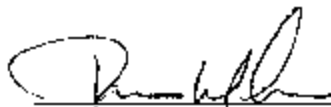


SID/HIII Calibration Data Sheet
Side Impact Dummy
Lumbar Flexion Calibration

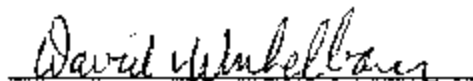
ATD Serial No: 036

Test I.D: D03115

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	20.7	Pass
Laboratory Relative Humidity	%	10 to 70	14	Pass
Force At 0 deg	N	0 - 26.7	0.0	Pass
Force At 20 deg	N	97.9 - 151.2	109.5	Pass
Force At 30 deg	N	151.2 - 204.6	160.1	Pass
Force At 40 deg	N	204.6 - 258.0	210.8	Pass
Return Angle	Deg	12 Maximum	6	Pass
Overall Test Results				Pass


 Laboratory Technician

02/05/2003
 Test Date

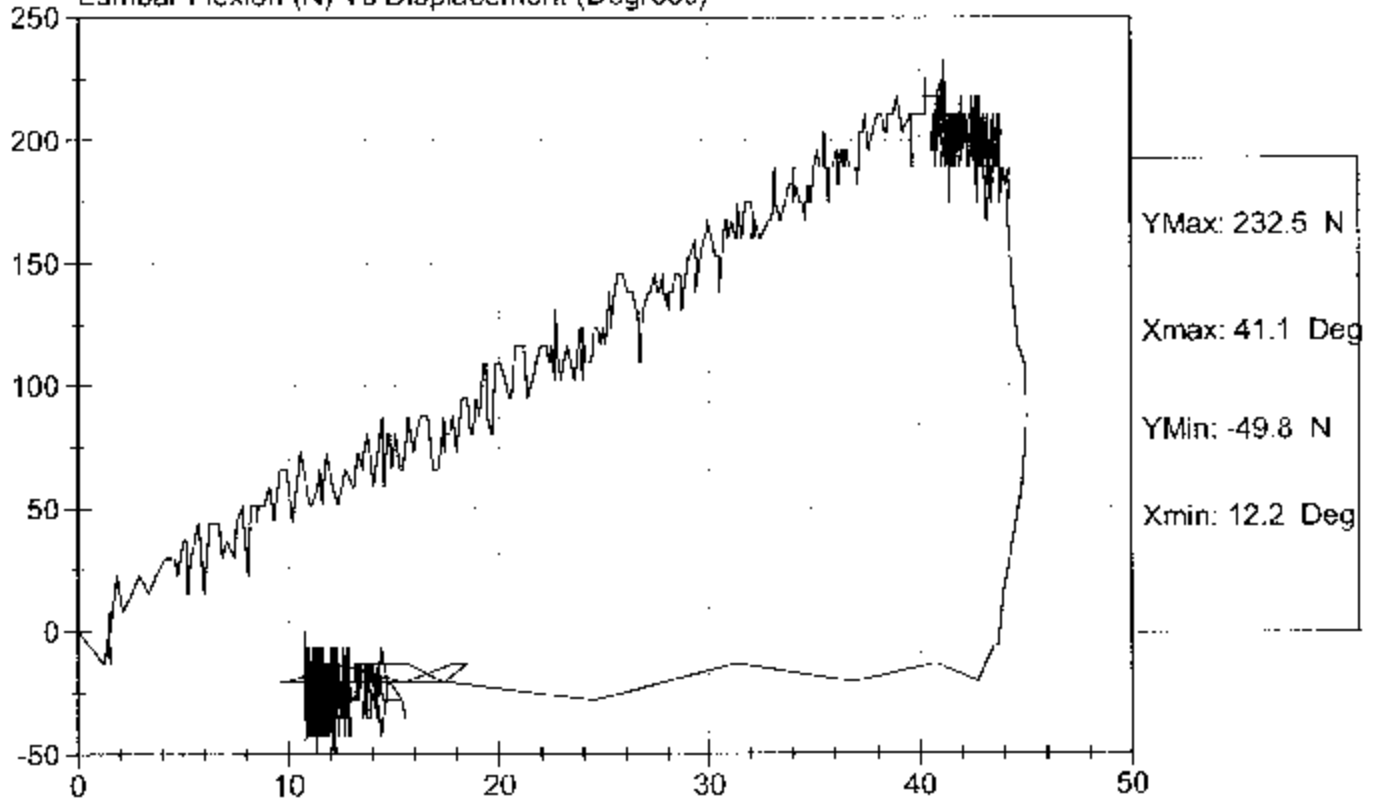

 Approved By



Test Description: Lumbar Flexion
Component: D03115

Test Date: 02/05/2003
Speed: 0 ft/sec, 0 m/sec

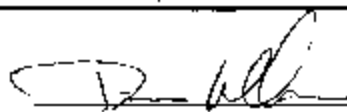
Lumbar Flexion (N) Vs Displacement (Degrees)



SID/HII Calibration Data Sheet
Side Impact Dummy
Inspection Checklist

ATD Serial No: 036

Test Part	Items Checked	Result
Skin	Visual inspection	Pass
Head	Visual, ballast, accelerometer mount	Pass
Neck	Visual	Pass
Spine Box	Visual, ballast, accelerometer mount	Pass
Rib Cage	Visual, measure	Pass
Sternum	Visual	Pass
Lumbar Spine	Visual	Pass
Abdomen	Visual	Pass
Pelvis	Visual, palpate, accelerometer mount	Pass
Upper Legs	Visual	Pass
Knees	Visual	Pass
Lower Legs	Visual, range of motion	Pass
Ankles	Visual, range of motion	Pass
Feet	Visual, range of motion	Pass
Joints	1 to 2 g range	Pass
Other		Pass


 Laboratory Technician
David Wahlbauer
 Approved By

03/21/2003

Test Date

CERTIFICATION DATA

Dummy Serial Number: 036

CERTIFICATION DATA

Dummy Serial Number: 036

Post-Test Calibration

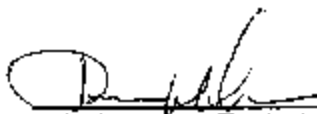
External Dimensions:	The dummy passed all external dimensions requirements.
Head Drop Test:	The head passed all drop test requirements.
Thorax Impact Test:	The thorax passed all impact test requirements.
Pelvis Impact Test:	The pelvis passed all impact test requirements.
Abdominal Compression Test:	The abdomen passed all compression test requirements.
Lumbar Flexion Test:	The lumbar passed all flexion test requirements.

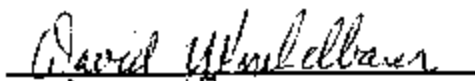
SID/HII Calibration Data Sheet
Side Impact Dummy
External Measurements

ATD Serial No: 036

Test I.D.: D0354

Tested Parameter	Units	Specification	Result	Pass/Fail
SH - Seated Height	mm	889 - 909	903	Pass
RH - Rib Height	mm	501 - 521	513	Pass
HP - Hip Pivot Height	mm	99 ref.	99	Pass
RD - Rib from Back Line	mm	229 - 241	232	Pass
KV - Knee Pivot to Back Line	mm	511 - 526	519	Pass
SW - Knee Pivot to Floor	mm	490 - 505	496	Pass
HW - Hip Width	mm	356 - 391	383	Pass
Overall Test Results				Pass


Laboratory Technician


Approved By

3/28/03
Test Date

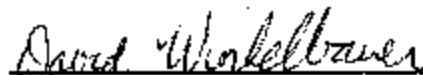
SID/HIII Calibration Data Sheet
Side Impact Dummy
Head Drop Calibration (Lateral)

ATD Serial No: 036

Test I.D: D03541

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.5	21.4	Pass
Laboratory Relative Humidity	%	10 to 70	28	Pass
Peak Resultant Acceleration	G's	120 to 150	124	Pass
Is Resultant Curve Unimodal?	Yes/No	15% of peak	Yes	Pass
Peak Longitudnal Acceleration	G's	+/- 15	-10	Pass
Overall Test Results				Pass


Laboratory Technician


Approved By

03/27/2003
Test Date



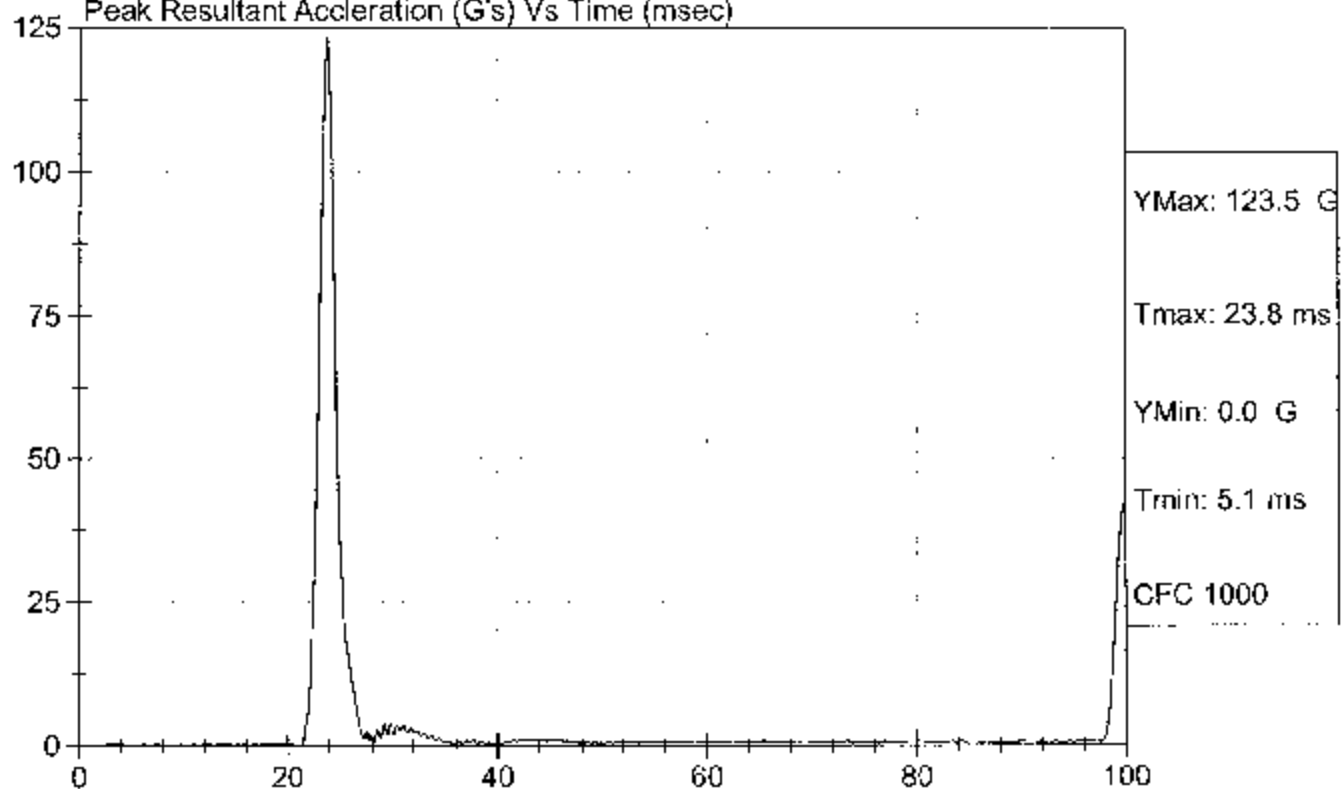
Test Description: Head Drop

Test Date: 03/27/2003

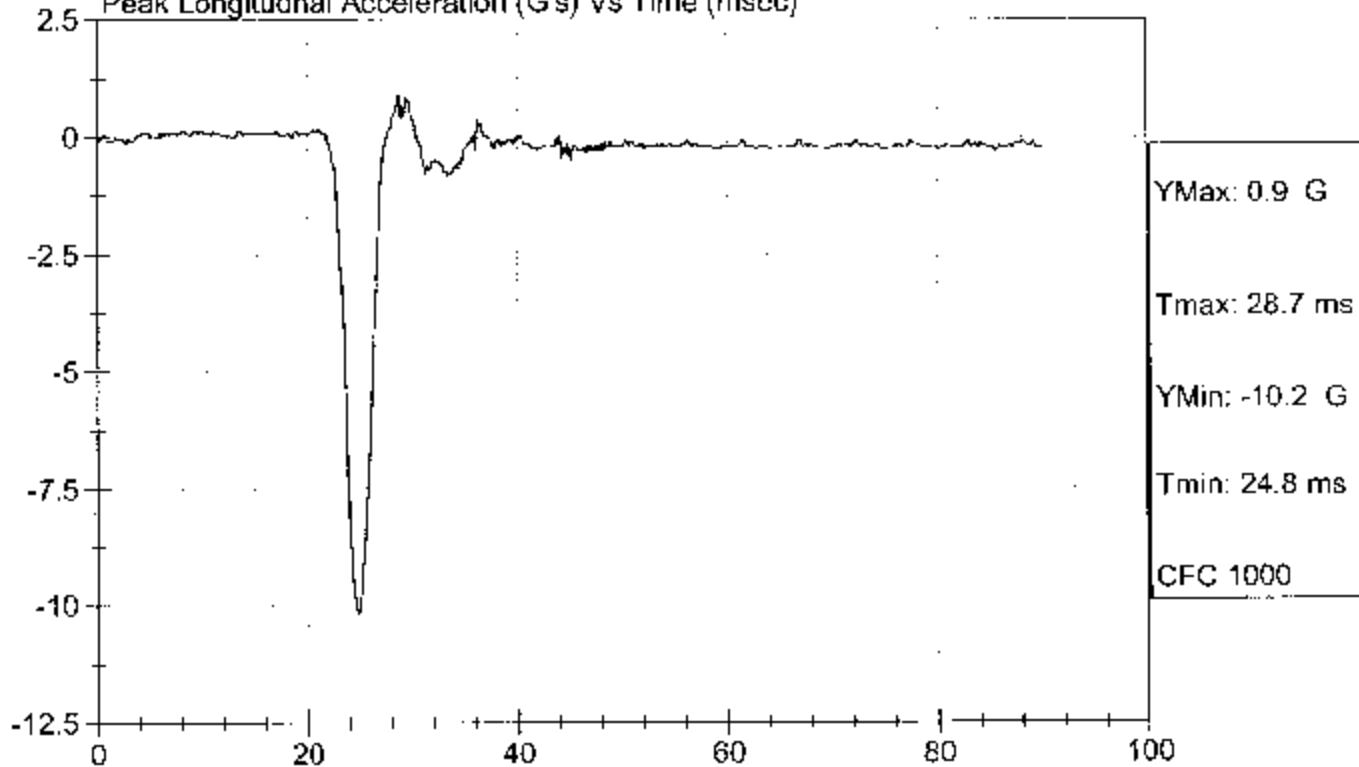
Component: D03541

Speed: 0 ft/s, 0.00 m/s

Peak Resultant Acceleration (G's) Vs Time (msec)



Peak Longitudinal Acceleration (G's) Vs Time (msec)



SID/HIII Calibration Data Sheet
Side Impact Dummy (SID)
Neck Pendulum Test

ATD Serial No: 036

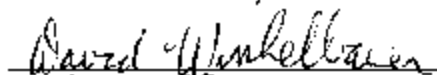
Test I.D: D03549

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		deg C	20.6 to 22.2	21.3	Pass
Laboratory Relative Humidity		%	10 to 70	21	Pass
Impact Velocity		m/s	6.89 to 7.13	7.02	Pass
Pendulum Deceleration	10 msec	m/s	1.96 to 2.55	2.46	Pass
	20 msec	m/s	4.12 to 5.10	4.83	Pass
	30 msec	m/s	5.73 to 7.01	6.77	Pass
	40 to 70 msec	m/s	6.27 to 7.64	7.04	Pass
Midsagittal Plane Max Rotation		deg	66 to 82	73	Pass
Head Rotation Peak to Zero - Decay Time		msec	58 to 67	60	Pass
Max. Mx at Occipital Condyles		Nm	73 to 88	77	Pass
Mx Peak To Zero - Decay Time		msec	49 to 64	57	Pass
Mx Peak to Max. Head Rotation		msec	2 to 16	14	Pass


 Laboratory Technician

03/31/2003

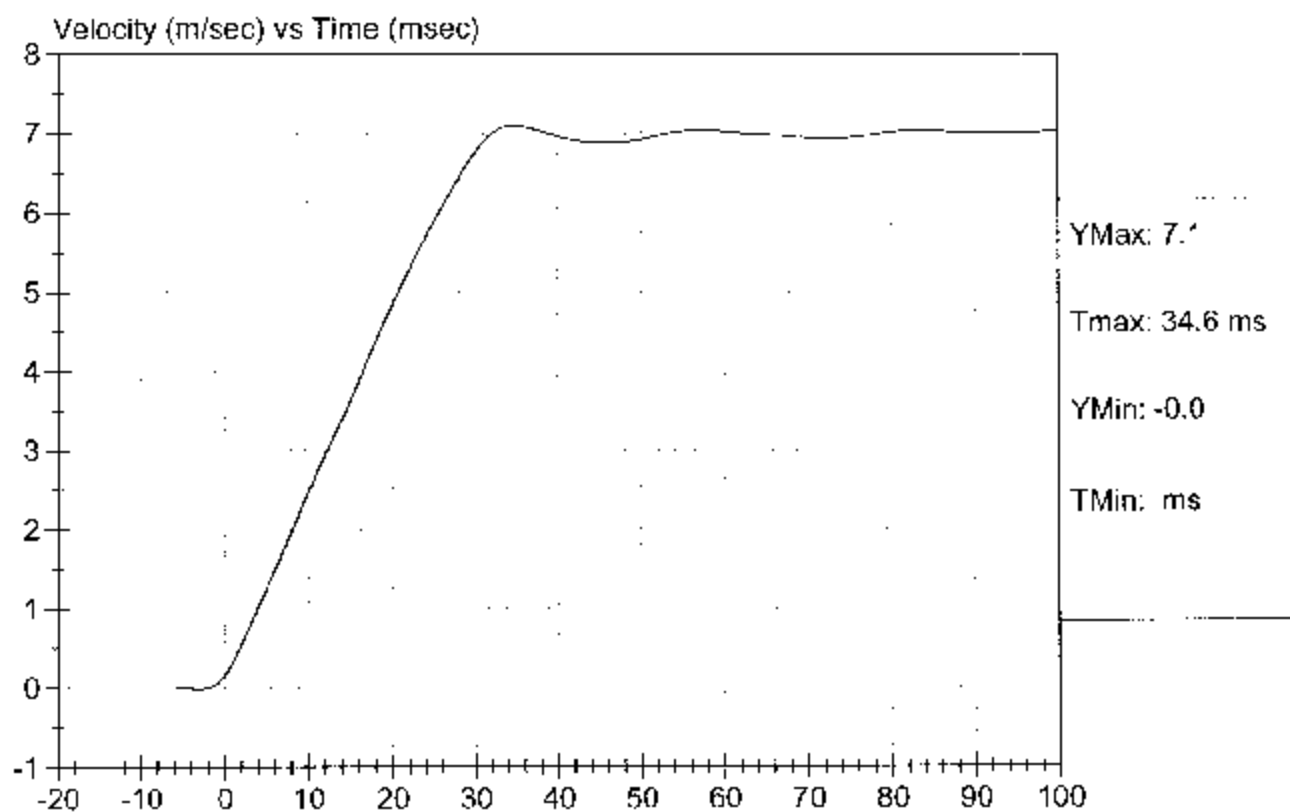
Test Date


 Approved By



Test Desc: Neck Bending
Component ID: D03549

Test Date: 03/31/2003
Speed: 23.02 ft/sec, 7.02 m/sec

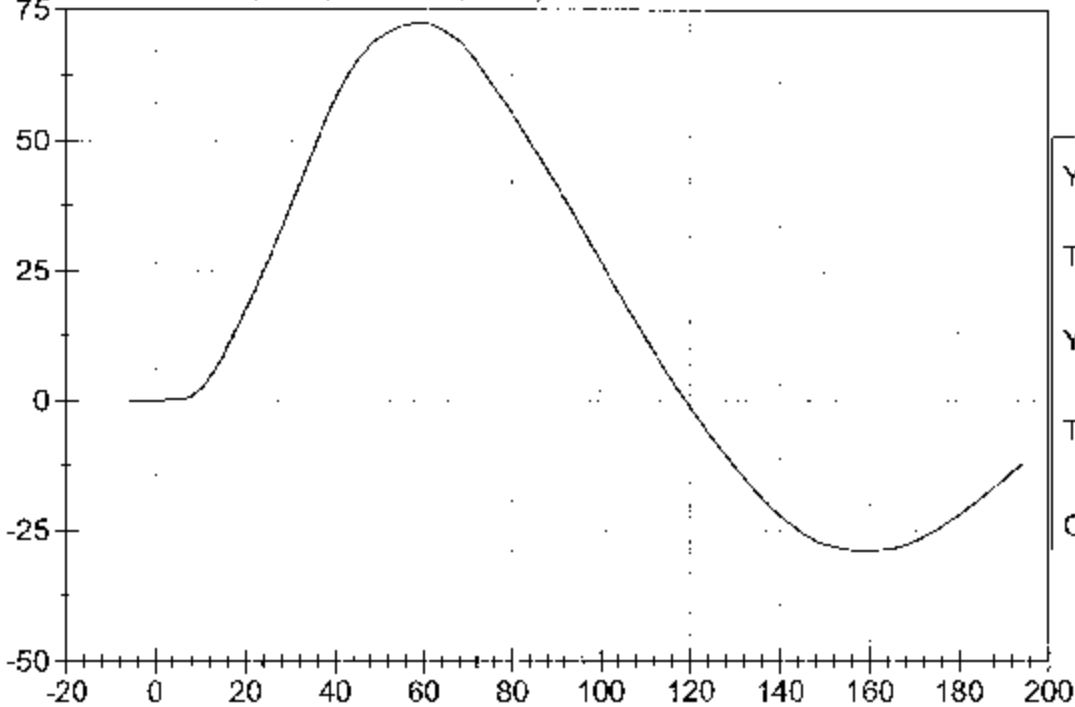




Test Desc: Neck Bending
Component ID: D03549

Test Date: 03/31/2003
Speed: 23.02 ft/sec, 7.02 m/sec

Neck Rotation (DEG) vs Time (msec)



YMax: 72.6

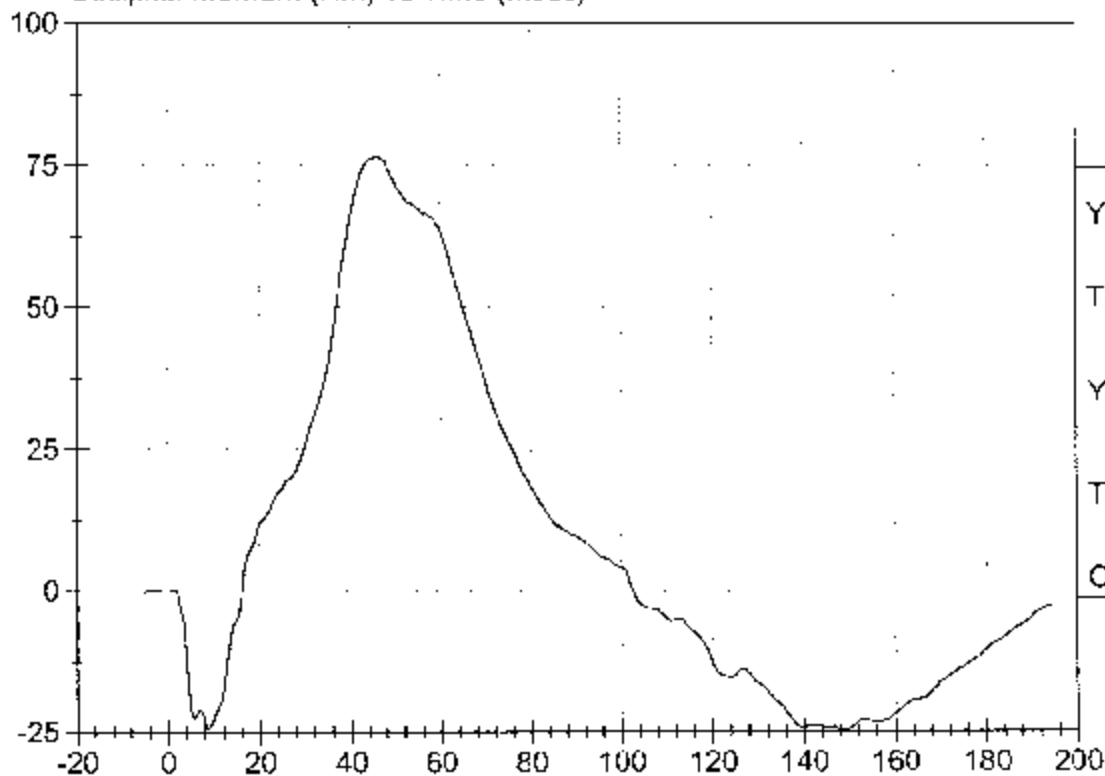
Tmax: 59.6 ms

YMin: -29.0

Tmin: 159.1 ms

CFC 60

Occipital Moment (Nm) vs Time (msec)



YMax: 76.5

Tmax: 45.5 ms

YMin: -24.9

Tmin: 149.2 ms

CFC 600

SID/HIII Calibration Data Sheet
Side Impact Dummy
Thorax Impact Test

ATD Serial No: 036

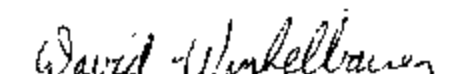
Test I.D.: D03542

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	21.4	Pass
Laboratory Relative Humidity	%	10 to 70	28	Pass
Probe Velocity	m/s	4.27 - 4.33	4.30	Pass
Upper Rib	G's	37 - 46	43	Pass
Lower Rib	G's	37 - 46	41	Pass
Lower Spine	G's	15 - 22	17	Pass
Overall Test Results				Pass


Laboratory Technician

03/27/2003

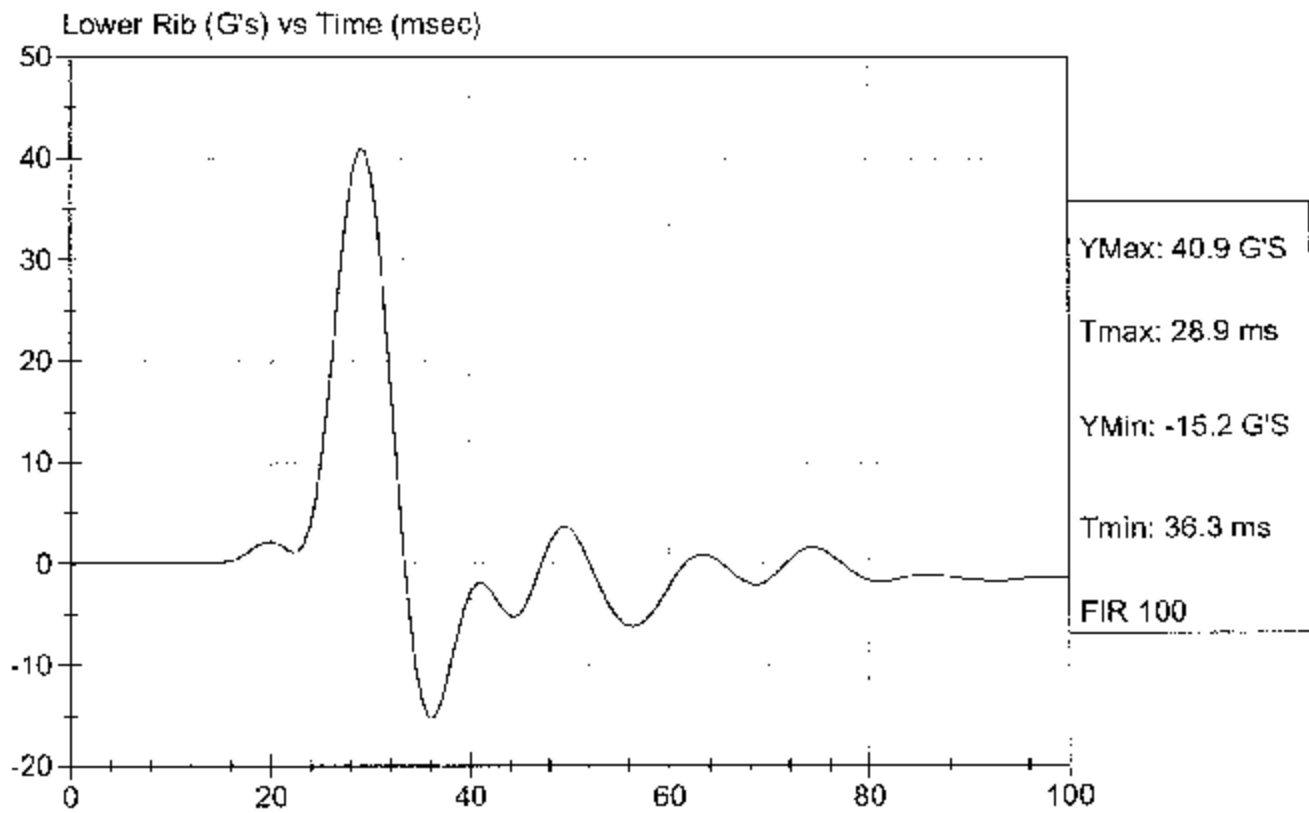
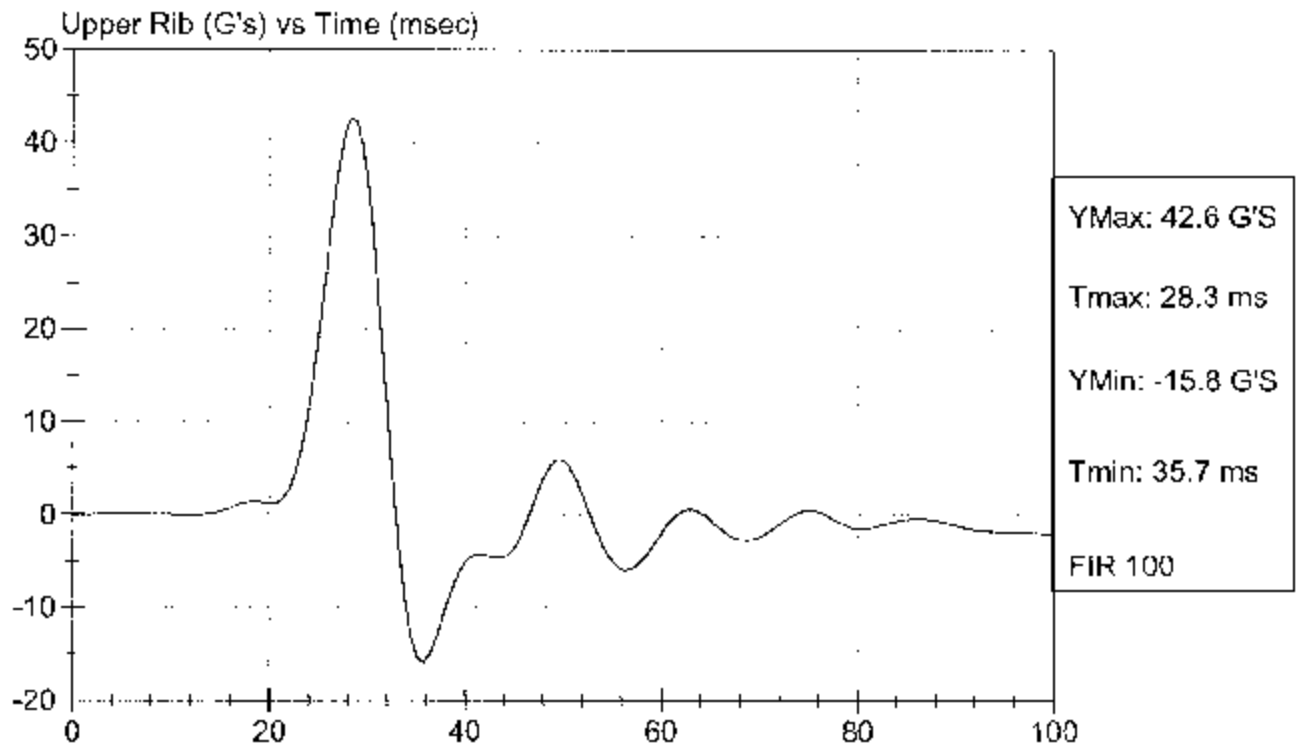
Test Date


Approved By



Test Desc: Thorax Impact
Component ID: D03542

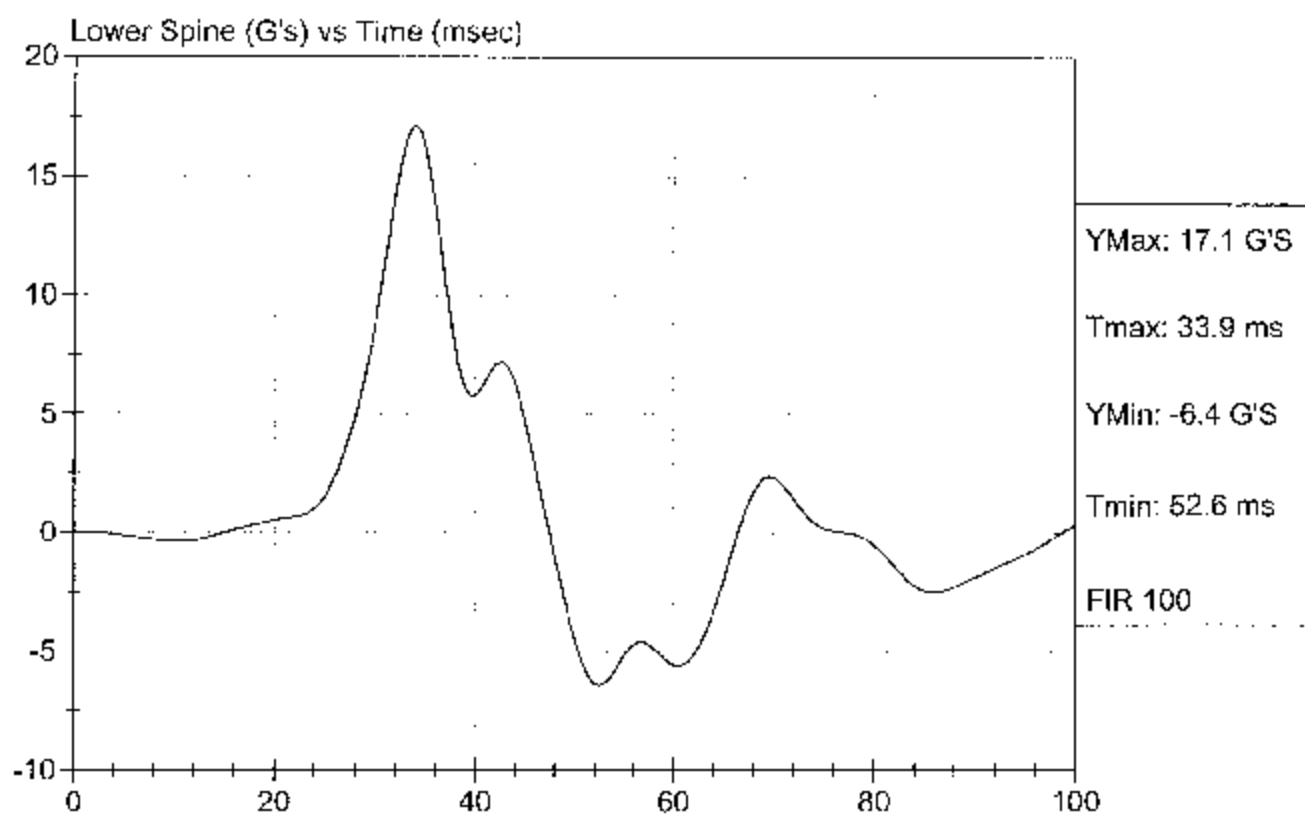
Test Date: 03/27/2003
Speed: 14.1 ft/sec, 4.30 m/sec





Test Desc: Thorax Impact
Component ID: D03542

Test Date: 03/27/2003
Speed: 14.1 ft/sec, m/sec

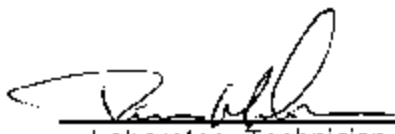


SID/Hill Calibration Data Sheet
Side Impact Dummy
Pelvis Impact Test

ATD Serial No: 036 _____

Test I.D: D03543

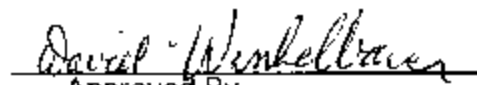
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.5	21.4	Pass
Laboratory Relative Humidity	%	10 to 70	28	Pass
Probe Velocity	m/s	4.27 - 4.33	4.27	Pass
Pelvis Acceleration	G's	40 - 60	45	Pass
Overall Test Results				Pass



Laboratory Technician

03/27/2003

Test Date



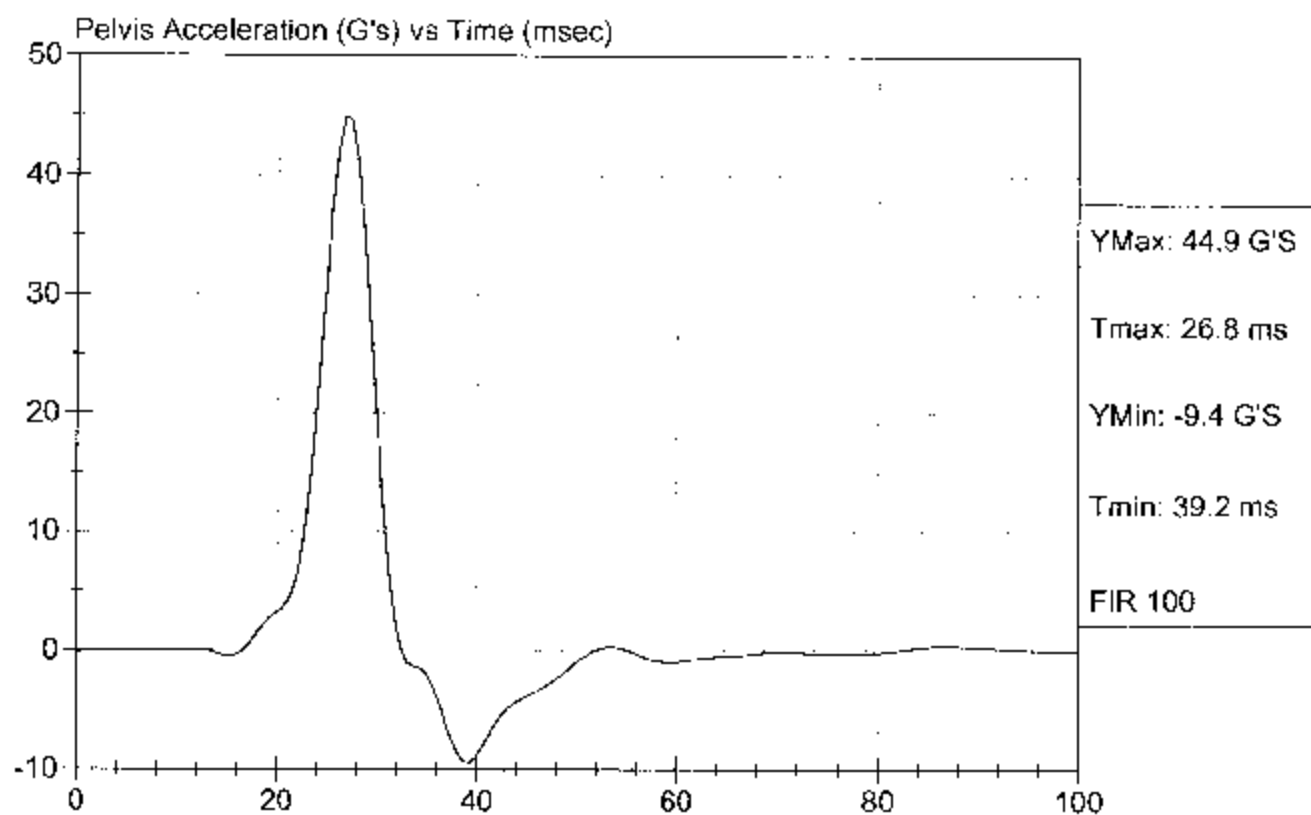
Approved By



Test Desc: Pelvis Impact
Component ID: D03543

Test Date: 03/27/2003

Speed: 14 ft/sec, 4.27 m/sec

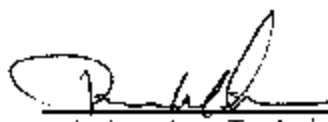


SID/HIII Calibration Data Sheet
Side Impact Dummy
Abdominal Compression Calibration (Pre-Load = 10 lbs)

ATD Serial No: 036

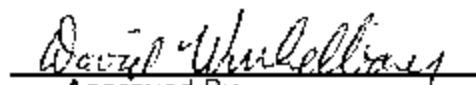
Test I.D: D03544

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	20.9	Pass
Laboratory Relative Humidity	%	10 to 70	29	Pass
Force At 12.7 mm	N	104 -162	143	Pass
Force At 19 mm	N	163 - 222	194	Pass
Force At 25.4 mm	N	222 - 280	262	Pass
Force At 33 mm	N	325 - 391	358	Pass
Overall Test Results				Pass


 Laboratory Technician

03/28/2003

Test Date


 Approved By

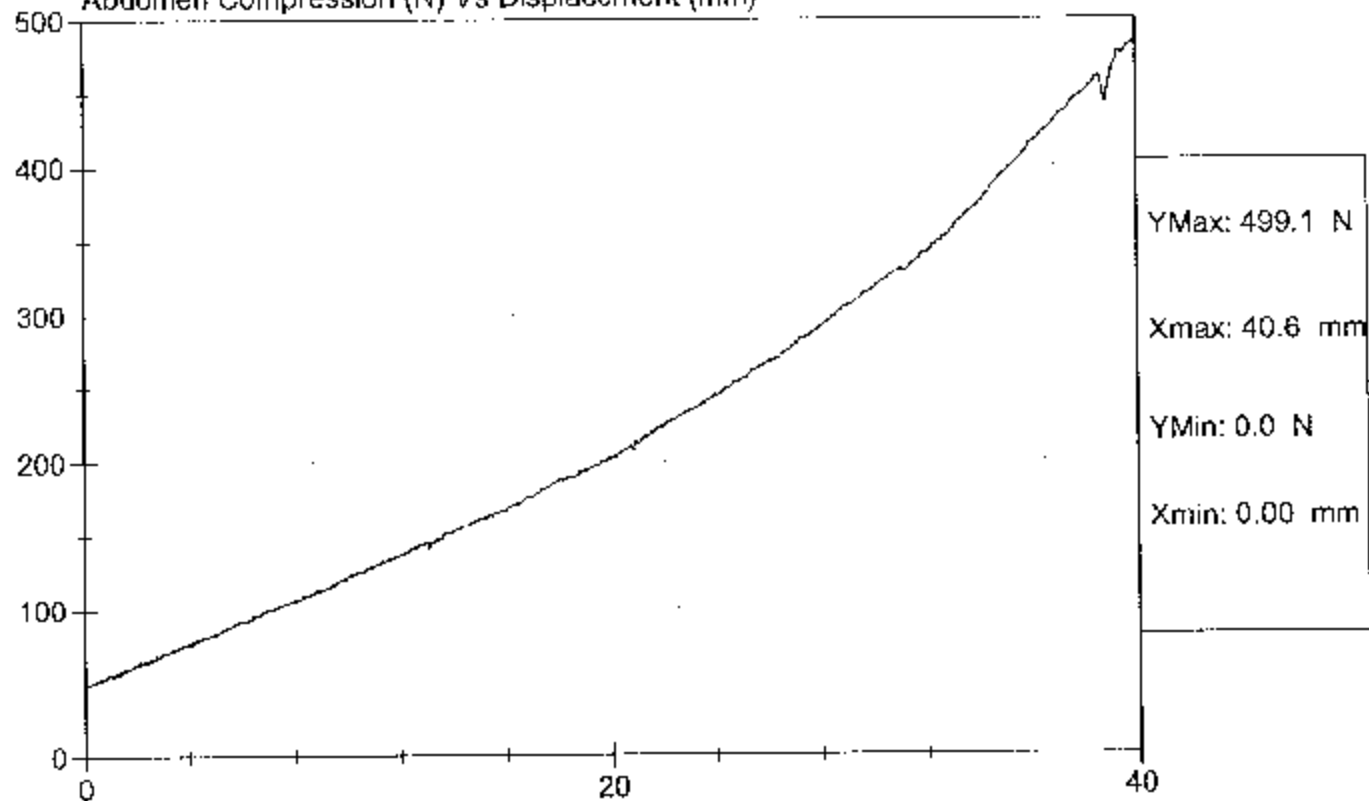


Test Description: Abdomen Compression Test Date: 03/28/2003

Component: D03544

Speed: 0 ft/sec, 0 m/sec

Abdomen Compression (N) Vs Displacement (mm)

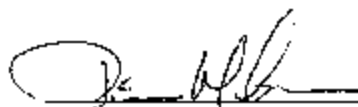


SID/HIII Calibration Data Sheet
Side Impact Dummy
Lumbar Flexion Calibration

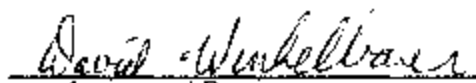
ATD Serial No: 036

Test I.D.: D03545

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	28	Pass
Force At 0 deg	N	0 - 26.7	0.0	Pass
Force At 20 deg	N	97.9 - 151.2	118.7	Pass
Force At 30 deg	N	151.2 - 204.6	179.9	Pass
Force At 40 deg	N	204.6 - 258.0	241.0	Pass
Return Angle	Deg	12 Maximum	8	Pass
Overall Test Results				Pass


 Laboratory Technician

03/27/2003
 Test Date


 Approved By

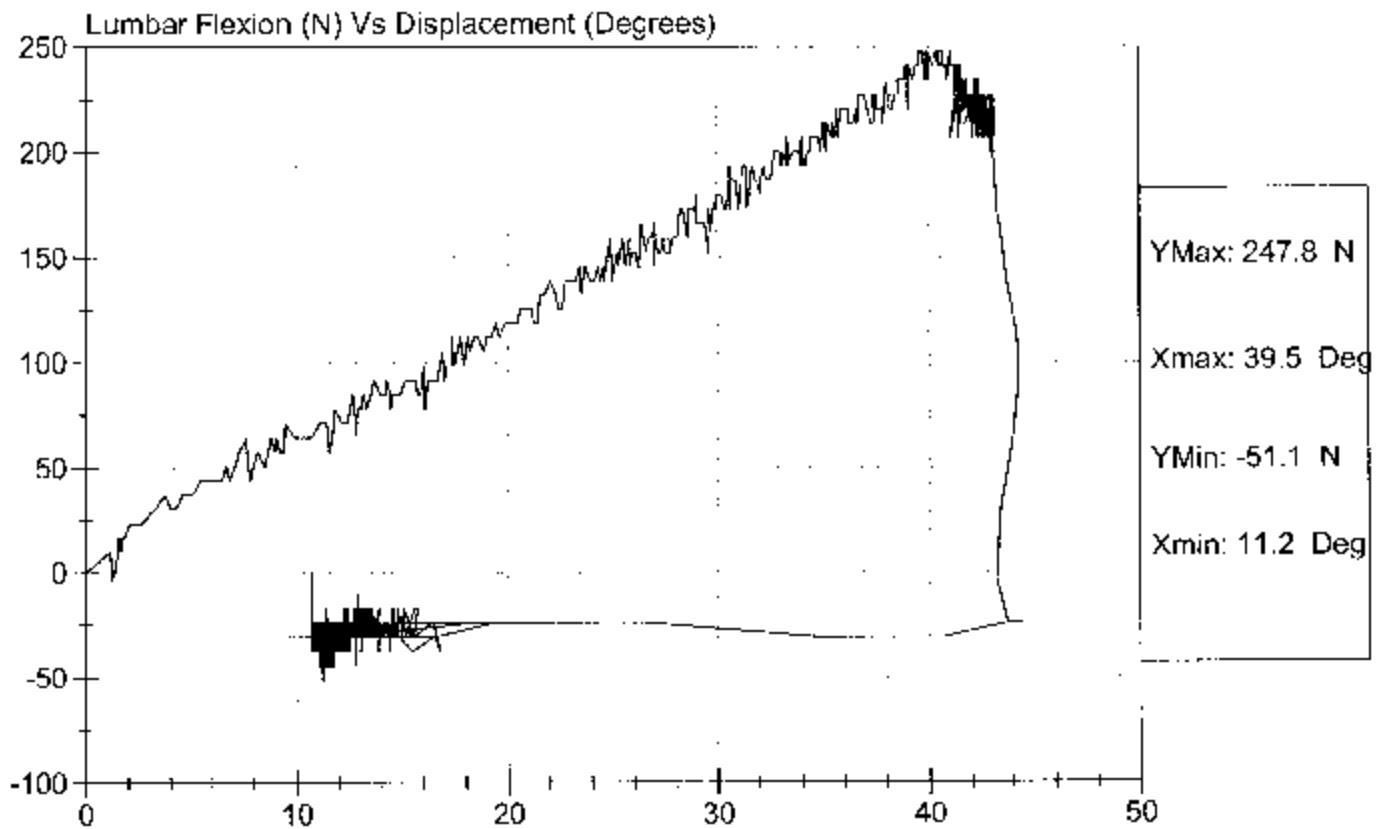


Test Description: Lumbar Flexion

Test Date: 03/27/2003

Component: D03545

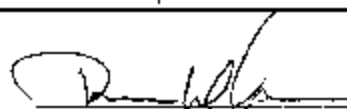
Speed: 0 ft/sec, 0 m/sec



SID/HIII Calibration Data Sheet
Side Impact Dummy
Inspection Checklist

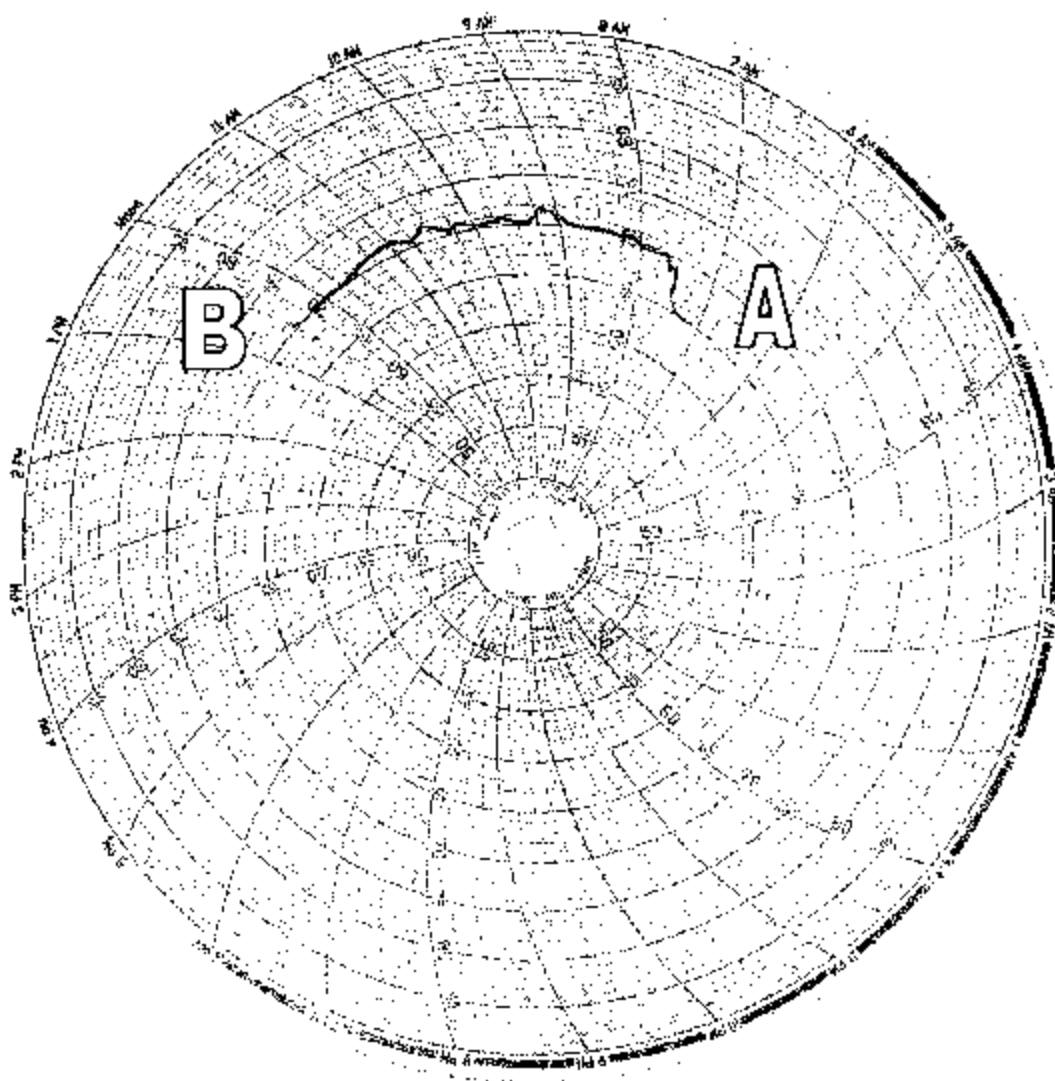
ATD Serial No: 036

Test Part	Items Checked	Result
Skin	Visual inspection	Pass
Head	Visual, ballast, accelerometer mount	Pass
Neck	Visual	Pass
Spine Box	Visual, ballast, accelerometer mount	Pass
Rib Cage	Visual, measure	Pass
Sternum	Visual	Pass
Lumbar Spine	Visual	Pass
Abdomen	Visual	Pass
Pelvis	Visual, palpate, accelerometer mount	Pass
Upper Legs	Visual	Pass
Knees	Visual	Pass
Lower Legs	Visual, range of motion	Pass
Ankles	Visual, range of motion	Pass
Feet	Visual, range of motion	Pass
Joints	1 to 2 g range	Pass
Other		Pass


 Laboratory Technician
David Winkler
 Approved By

03/28/2003
 Test Date

Vehicle and Dummy Temperature



A = Dummies installed in vehicle at 7:00 a.m.

B = Test conducted at 12:35 p.m.

APPENDIX D
TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

DUMMY AND VEHICLE CALIBRATION DATA

	INSTRUMENTS FOR DRIVER 036		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Head CG X	C12811	Endevco	3/11/03
Head CG Y	C12853	Endevco	3/11/03
Head CG Z	C12863	Endevco	3/11/03
Neck Load Cell	1562	Denton	12/17/02
Upper Rib Y	AN8L6	Endevco	1/8/03
Lower Rib Y	AJ420	Endevco	1/8/03
Lower Spine Y	J18953	Endevco	1/15/03
Pelvis Y	AGTM8	Endevco	1/24/03
Upper Rib Redundant Y	APY13	Endevco	1/8/03
Lower Rib Redundant Y	AMTA3	Endevco	1/8/03
Lower Spine Redundant Y	AGTY4	Endevco	1/8/03
Pelvis Redundant Y	AGTY6	Endevco	1/8/03

DUMMY AND VEHICLE CALIBRATION DATA (CONTINUED)

	VEHICLE ACCELEROMETERS		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Vehicle CG X	A08-M10	Entran	2/24/03
Vehicle CG Y	L12-F01	Entran	2/24/03
Vehicle CG Z	L12-F06	Entran	2/24/03
Left Floor Y	G01-N21	Entran	1/16/03
Left A-Post at Sill Y	H01-N33	Entran	11/19/02
Left Lower A-Post Y	H05-F17	Entran	10/31/02
Left Mid A-Post Y	H05-F03	Entran	10/30/02
Left B-Post at Sill Y	H01-N24	Entran	10/30/02
Left Lower B-Post Y	H01-N22	Entran	10/30/02
Left Mid B-Post Y	G01-N20	Entran	2/24/03
Driver Seat Track Y	G01-N09	Entran	2/24/03
Upper Engine X	G03-N06	Entran	1/16/03
Upper Engine Y	G01-N01	Entran	1/16/03
Firewall Y	K21-N04	Entran	1/16/03
Right Floor Y	H05-F09	Entran	10/31/02
Rear Deck X	A08-N02	Entran	2/24/03
Rear Deck Y	A08-M09	Entran	2/24/03
Left Front Door @ Rib Y	H01-N32	Entran	11/19/02
Left Front Door @ Pelvis Y	L23-A01	Entran	2/24/03
Left Front Door @ Knee Y	H01-N23	Entran	11/19/02

Note: Endevco accelerometers are Model No. 7264-2000 except
Head accelerometers which are Model No. 7231C-750TS.
All Entran accelerometers are Model No. EGE-72